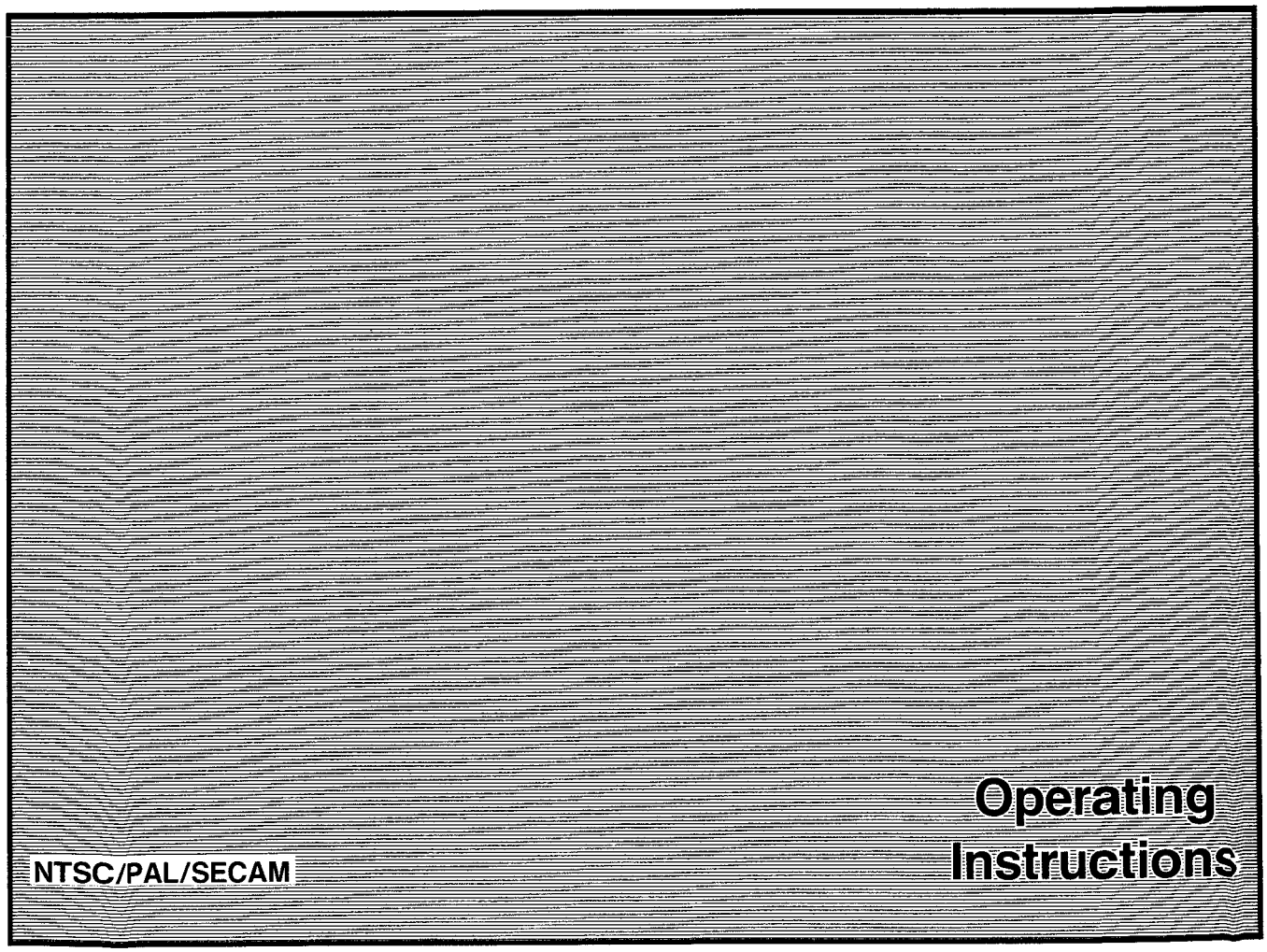
PIONEER®
The Art of Entertainment

PROJECTION MONITOR RECEIVER

SD-M1407



Thank you for purchasing the PIONEER Projection Color Television.
If you have not read the precautionary instructions enclosed with these operating instructions, please do so before proceeding.
After learning how to operate the Projection TV, be sure to keep this manual handy for future reference.

While the official name of the product is the "PROJECTION MONITOR RECEIVER", for convenience, the text refers to it as the "Projection TV".

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OPERATING PRECAUTIONS

DO NOT ALLOW STILL PICTURES OR PARTS OF PICTURES THAT DO NOT MOVE TO REMAIN ON THE SCREEN FOR AN EXTENDED LENGTH OF TIME. STILL IMAGES CAN ADVERSELY AFFECT YOUR PICTURE PROJECTION TUBES. SOME EXAMPLES OF STILL IMAGES ARE COMPUTERS, TEXT PROGRAMS, TELEVISION PROGRAMMING LOGOS AND VIDEO GAMES. IF STILL PICTURES CANNOT BE AVOIDED, REDUCE THE BRIGHTNESS AND CONTRAST LEVELS OF THE PICTURE TO MINIMIZE ANY DAMAGE THAT MIGHT OCCUR.

IMPORTANT NOTICE

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO WET LOCATIONS.

"This product complies with the Radio Interference requirements of the EC (European Community) Directive 87/308/EEC."

NOTE:
There are no user serviceable parts inside the Projection TV.

WARNING: The apparatus shall not be exposed to dropping or splashing.

IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT

FOR USE IN THE UNITED KINGDOM

The wires in this mains lead are coloured in accordance with the following code :

Blue	**: Neutral**
Brown	**: Live**

If the plug provided is unsuitable for your socket outlets, the plug must be cut off and a suitable plug fitted.

The cut-off plug should be disposed of and must not be inserted into any 13 amp socket as this can result in electric shock. The plug or adaptor or the distribution panel should be provided with 13 amp fuse. As the colours of the wires in the mains lead of this appliance may not correspond with coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Do not connect either wire to the earth terminal of a three pin plug.

NOTE
After replacing or changing a fuse, the fuse cover in the plug must be replaced with a fuse cover which corresponds to the colour of the insert in the base of the plug or the word that is embossed on the base of the plug, and the appliance must not be used without a fuse cover. If lost replacement fuse covers can be obtained from: your dealer.
Only 13 A fuses approved by B.S.I. or A.S.T.A to B.S. 1362 should be used.

PRELIMINARY INSTRUCTIONS

WHERE TO PUT THE PROJECTION TV

LIGHTING
Bright lights or direct sunlight will dull the picture. Set the Projection TV so that the screen faces away from windows.

AIR CIRCULATION
Leave space for air to circulate behind the Projection TV. Keep away from curtains and other furnishings that could block ventilation.

HEAT DAMAGE
Damage may occur if you leave the Projection TV in direct sunlight or near a heater.

OPTIMUM VIEWING DISTANCE
3 to 6 m is the range recommended for viewing comfort.

POWER SOURCE

This Projection TV operates on AC 220-240 V, standard household voltage.

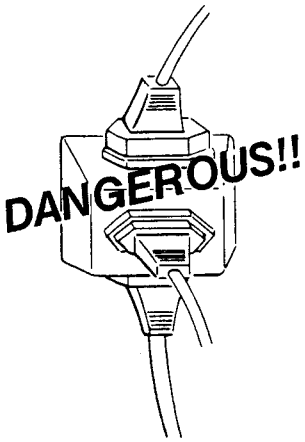
NEVER CONNECT THE PROJECTION TV TO OTHER THAN THE SPECIFIED VOLTAGE, OR TO DIRECT CURRENT.

POWER OUTLET

- A damaged cord or plug is a fire hazard. If you notice wear or damage, have it fixed by qualified service personnel.
- Plug directly into the wall socket. Do not use extension cords or other receptacles. Do not overload the outlet; it may cause a fire hazard.

NOTE:
- *Never remove the back cover of the Projection TV as this will expose you to dangerously high voltage and other hazards. If the set does not operate properly, unplug it and refer to page 41.*

• DANGEROUS



POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed in such a way that they are not likely to be stepped on. A damaged power cord can cause a fire or give you an electrical shock. Check the power cord once in a while. If you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

CONDENSATION

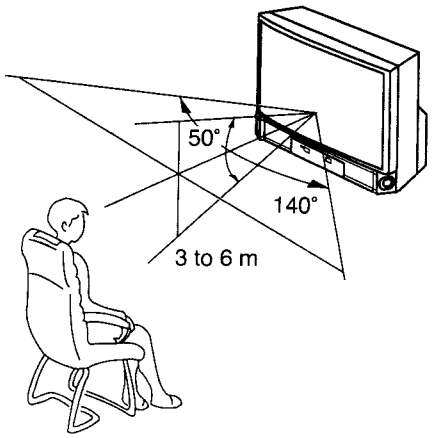
When the unit is brought into a warm room from previously cold conditions or when the room temperature is suddenly increased, condensation may form inside and the unit may not be able to attain its full performance. In cases like this, allow the unit to stand for about an hour or raise the room temperature gradually.

FEATURES

Wide Viewing Range Screen

- 140° Horizontal Viewing Angle and 50° Vertical Viewing Angle.
- Watch from at least 3 meters away from the screen.
  (Optimum viewing distance is 3 to 6 meters.)

You may sometimes see double images or rainbowlike effects if you view from outside of the recommended area shown here.



Ultra short focal length lens and surface diffusion screen for greatly improved brightness characteristics

High-precision digital convergence system

Black screen and black level correction circuit for higher contrast image reproduction

Microcomputerized Dynamic Picture Optimizer (DPO)

DPO (Dynamic Picture Optimizer) circuit detects room light and optimizes the TV picture accordingly.

Equipped with a VNR (Video Noise Reduction) system for reducing noise on the screen

AV Memory

After adjusting the picture and sound quality, you can store your settings in "AV memory". Four AV memory settings can be stored and recalled.

Video mode selection feature for the EURO connectors

You can choose the video input mode of the Projection TV's EURO connectors: Independent RGB inputs (Euro AV1 only), S (Separate) video or composite video inputs.

Table of pages feature (TOP)-compatible teletext system in addition to FASTEXT and STANDARD TELETEXT

You can enjoy Teletext service without the need for any additional adaptors.

Multisystem Video

This Projection TV incorporates PAL, SECAM, NTSC and 4.43 NTSC color systems and B/G, I, D/K, L and L' tuner reception systems.

Multisystem Tuner Stereo Mode

- NICAM DIGITAL Stereo (B/G, I)
- CCIR 2 Carrier Analog Stereo (B/G)

TV Station and AV Input Labeling

Auto power off feature

Projection TV power is turned off automatically if no signal is supplied to the Projection TV for more than almost eight minutes.

INSTALLATION

ANTENNA CONNECTION

Connect to an outdoor antenna or centralized antenna terminal. (See page 14 for details.)

MOUNTING

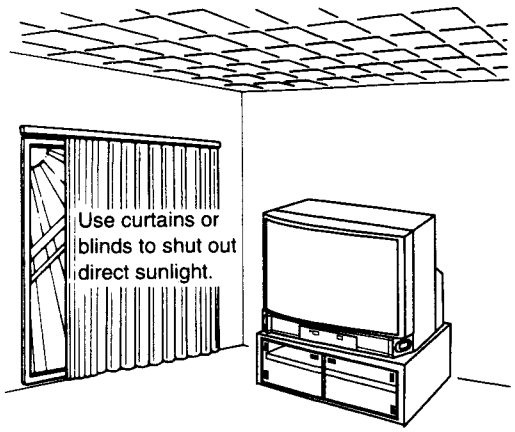
Mount the Projection TV on a steady TV rack and pedestal which are designed for heavy equipment mounting. The mounting surface should be flat and steady.
Do not put the Projection TV on a surface that is tilted, unsteady or prone to shake or vibrate. A shaky or slanted platform is dangerous.

INSTALLATION PRECAUTIONS:

Place of Installation

- When the Projection TV is operating, it is cooled by air-flow through ventilation holes in the rear and bottom. Therefore, avoid placing it in a location where the cooling air-flow is hindered (e.g. against a wall).
- Avoid places subject to extremely high temperatures or humidity, or to temperatures of 5°C or lower. Also avoid dusty places.
- Do not set the Projection TV in an unstable location (such as on a shaky or tilted platform).
- If setting the Projection TV on a floor or pedestal made of soft material, make sure that the floor or pedestal will not be damaged by the weight of the Projection TV.
- If the room temperature suddenly rises (or if the Projection TV is moved from a cool place to a hot place), condensation may form on the lenses, resulting in picture distortion or color fading. If this occurs, simply wait a while (with the ⏻ switch on) and the condensation will disappear.

Downward spot lights or fluorescent lights in an overhead "Honeycomb" prevent direct illumination of the screen.



Cover shiny surfaces (floor and walls) with nonreflective materials (carpet, rugs, wallpaper, etc.).

OPERATING PRECAUTIONS

Keep away from magnetic fields

The picture may be distorted if strong magnetic fields are nearby. External loudspeakers should be set at least 60 cm away from the Projection TV. Electric fans and other motor driven appliances and toys may also be sources of magnetism.

When moving the Projection TV

Pull out the plug and move the Projection TV carefully. Be particularly careful not to bump or scratch the screen.

Adjust room illumination

Excessively bright or dim lighting may strain your eyes. Draw the curtains if necessary to shut out direct sunlight.

When not using the Projection TV for a long time

For safety, unplug the power cord when leaving the Projection TV turned off for a long period of time.

Condensation and picture blurring

- You may see a blurred picture if the Projection TV is moved from a cool to a warm location or if room temperature rises very rapidly.

  This occurs when moisture from the air condenses on the optical parts.
- The picture will return to normal if you leave the Projection TV turned off for 1 or 2 hours, before using it.
- A gradual change in temperature can prevent dew formation.

A word about still pictures

Do not project a still picture on your Projection TV for a long period of time.
(For example: when using your Projection TV for video games, displaying a test pattern or text program, monitoring your personal computer, or while playing back video discs.) This can adversely affect Projection TV's CRT. If this cannot be avoided, reduce the contrast of the picture in order to minimize any damage which might occur.

MAINTENANCE OF EXTERNAL SURFACES

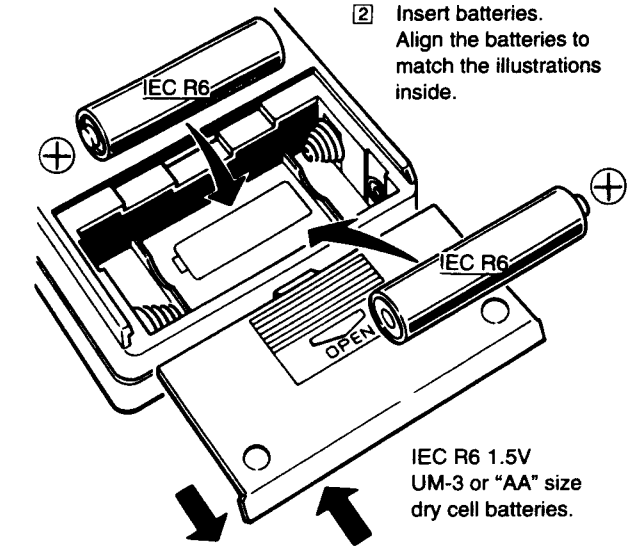
- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleaner diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

INSERTING BATTERIES IN THE REMOTE CONTROL UNIT

You will find the remote control unit packed inside the Projection TV box. Open the remote control unit and insert the batteries. Follow the procedure below:

1. Open the battery compartment on the rear of the remote control unit. Press down with your thumb while sliding the lid outward.
2. Note the polarity (+ and –) markings in the case. Insert the supplied batteries so that they match the markings.
3. Close the lid by sliding it back in until it clicks into place.

INSERTING BATTERIES


2 Insert batteries. Align the batteries to match the illustrations inside.
IEC R6
IEC R6
OPEN
IEC R6 1.5V UM-3 or "AA" size dry cell batteries.
1 Open by pressing with your thumb while sliding outward.
3 Close the lid by sliding it back into place.

Incorrect use of batteries may lead to leakage or rupture.
Always be sure to follow these guidelines:

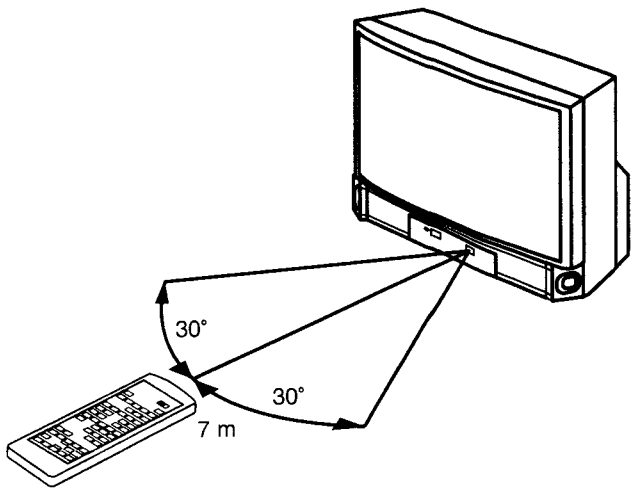
A.
Always insert batteries into the battery compartment correctly matching the positive ⊕ and negative ⊖ polarities, as indicated inside the compartment.

B.
Never mix new and used batteries.

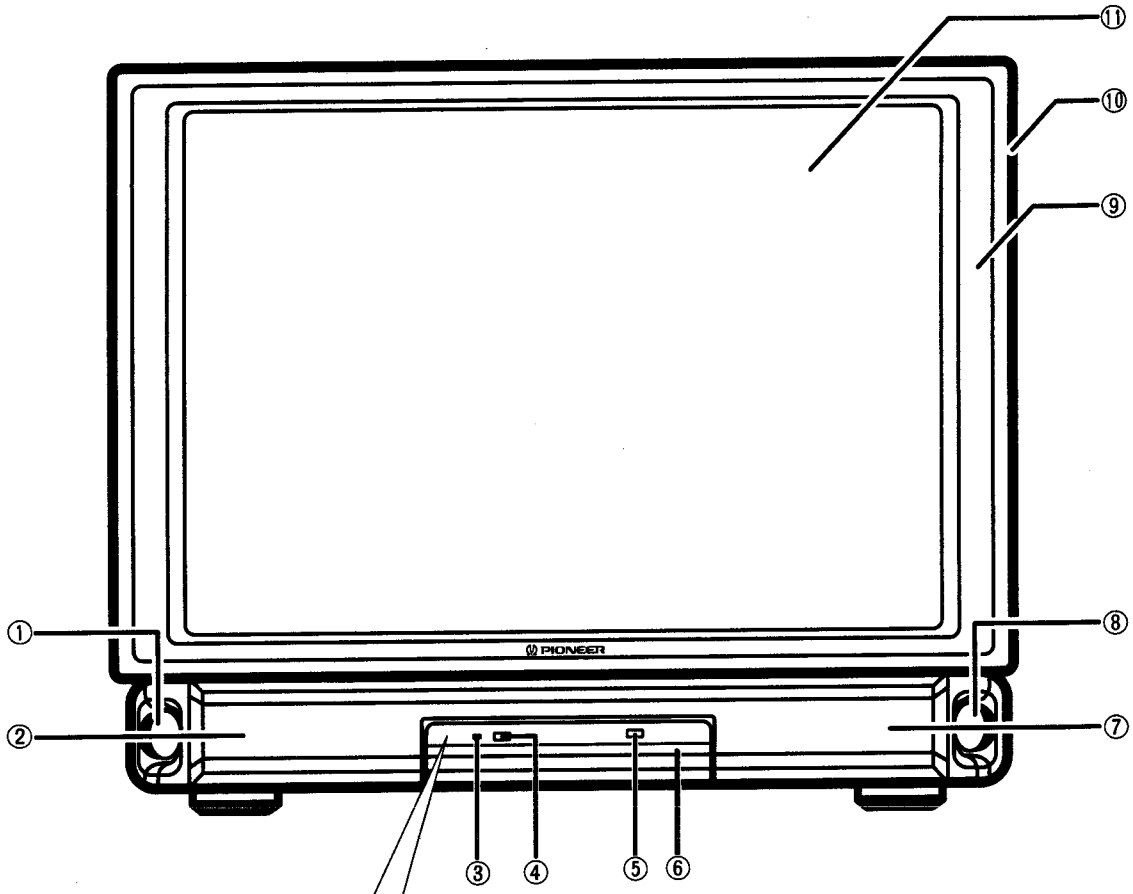
C.
Batteries of the same size may have different voltages, depending on their type. Do not mix different types of batteries.

REMOTE CONTROL OPERATION RANGE

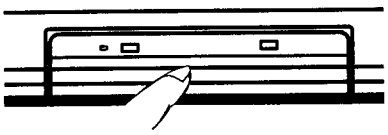
- Point the remote control unit toward the front of the Projection TV when you press any of the control buttons.
- The remote control unit should be effective at distances of up to about 7 meters from the Projection TV and at angles of up to about 30 degrees from a line perpendicular to the front panel.
- Furniture and other obstacles may block the infrared light beam so that it cannot reach the sensor on the Projection TV's front panel.
- If there is no response even when the remote control is used directly in front of the Projection TV, the dry cell batteries may need replacement.
- Performance of the remote control unit is adversely affected in the presence of strong fluorescent light. Keep such lights away from the sensor window in particular.



FRONT PANEL FACILITIES



A flip-down door conceals the control panel. Push gently and release to open the door.
To close the door, lift it back up into place.



NOTE:

- *If you accidentally pull the door open, it may not shut properly. Push in when shutting the door to restore it to normal operation.*

① **Speaker Duct (Left channel)**
② **Speaker (Left channel)**
③ **Power Indicator**
④ **DPO (Dynamic Picture Optimizer) Sensor**
⑤ **Remote Sensor**
⑥ **Control panel door**
⑦ **Speaker (Right channel)**
⑧ **Speaker Duct (Right channel)**
⑨ **Screen Frame**
⑩ **Cabinet**
⑪ **Screen**

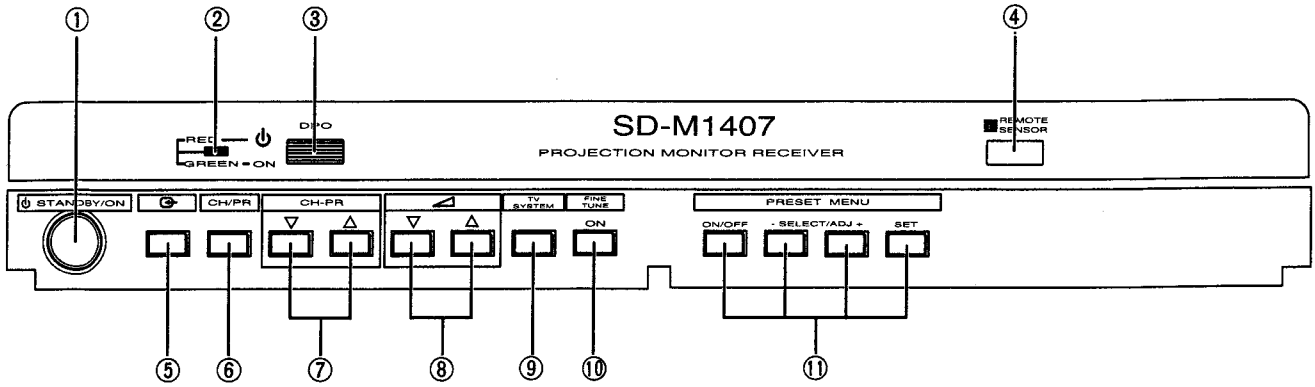
Attention:

- To prevent damage to the internal left and right speakers or bad sound reproduction, do not insert any foreign objects (a ball, etc.) into the left and right speaker ducts.
- The Projection TV will not function properly in the following cases:
  - Lightning storms.
  - High static electricity environment.
  - Poor voltage regulation in the power source.

If the Projection TV does not operate properly, reset it as follows:
① Unplug from the power supply for approximately 1 minute.
② Plug the power cord in again to reset it.

Some memorized modes such as the last memorized mode may be erased when resetting the Projection TV.

Inside of the control panel door



① ⏻ STANDBY/ON Button
Press once to turn on the power (the STANDBY/ON indicator ② turns green). Press again, to set to standby mode (the STANDBY/ON indicator ② turns red).

ON: When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

② ⏻ STANDBY/ON Indicator
The red indicator is lit when the Projection TV is in the standby mode, and lit green when it is in power on mode.

③ DPO Sensor
This sensor detects ambient lighting for the DPO (Dynamic Picture Optimizer) circuit which adjusts the TV picture accordingly.

④ Remote Sensor
This sensor picks up infrared signals from the remote control unit.

⑤ ⊖ (Input Selector) Button
Press to select INPUT source. INPUT sources will change as follows: TV, AV-1, AV-2, AV-3, AV-4. Even when TV, AV-2, AV-3 or AV-4 is selected, if the switching voltage is received from AV-1 (EURO-AV socket ⑧ pin), the input selector switches to AV-1.

⑥ CH/PR (Channel/Program) Button
Press to switch between the channel and the program number tuning functions.

⑦ CH-PR (Channel-Program) △ / ▽ Buttons
Press up (△) or down (▽) to tune to a higher or lower channel or program. Only those programs in STATIONS STORING can be tuned in by this method. For details, see page 31.

⑧ ◁ (Volume) Buttons
Press the up (△) or down (▽) button to raise or lower the volume.

⑨ TV SYSTEM Button
To select TV system, B/G, I, L, L′ or D/K during TV reception and to select channel table.

⑩ FINE TUNE Button
Press to turn the fine tuning function on and off. Press the PRESET MENU SELECT/ADJ +/— buttons after turning on the fine tuning function if you wish to finely adjust the tuning.

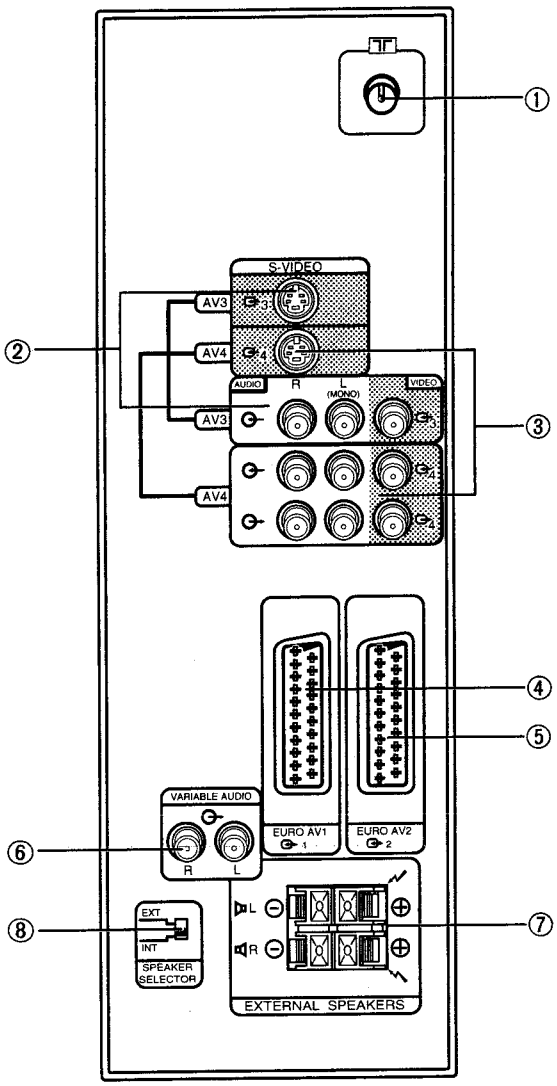
⑪ PRESET MENU Buttons
These buttons are used to perform the following presetting operations: color convergence adjustment, AV memory storing, DPO adjustments, Video mode settings, Color system setting, Sound system setting and TV stations storing. For details, refer to the description of each function.

ON/OFF: Press to turn the operation menu on and off. When the operation menu is turned on, CONVERGENCE, AV MEMORY, DPO BASE, VIDEO SYSTEM, COLOR SYSTEM, SOUND SYSTEM and STATIONS STORING will appear on the screen.

SELECT/ADJ: Press to select or adjust each of the above operations. The selected item will turn red on the screen.
These buttons are used as channel select buttons when the stations storing operation is engaged.

SET: Press to store the setting after adjusting or selecting an item.

REAR PANEL FACILITIES



① ⊓ (Antenna input) Terminal
Connect to 75 Ω antenna cable.

② AV3 ⊖ (Input) Jacks (for playback)
Connect to additional equipment such as a video cassette recorder or LD player.
S-Video (Separate-Video input): If you attach additional equipment to this jack, use an optional S-Video connection cord.
(If both the VIDEO and S-VIDEO jacks are connected at the same time, the VIDEO jack input signal will be automatically cut off when equipment is plugged into this jack.)
VIDEO (Video input): Connect to the video output jack of your equipment.
AUDIO L (MONO), R (Left and Right Audio inputs): Connect to the left and right channel output audio jacks of your equipment. If your equipment is a monaural audio system, use only the L (MONO) jack for audio input connection.

③ AV4 ⊖ (Input), ⊖ (Output) Jacks
AV4 ⊖ (Input):
Connect to additional equipment such as a video cassette recorder or LD player.
S-Video (Separate-Video input): If you attach additional equipment to this jack, use an optional S-Video connection cord.
(If both the VIDEO and S-VIDEO jacks are connected at the same time, the VIDEO jack input signal will be automatically cut off when equipment is plugged into this jack.)
VIDEO (Video input): Connect to the video output jack of your equipment.
AUDIO L (MONO), R (Left and Right Audio inputs): Connect to the left and right channel output audio jacks of your equipment. If your equipment is monaural audio system, use only the L (MONO) jack for audio connection.
AV4 ⊖ (Output):
VIDEO (Video output): Connect to the video input of additional video equipment such as a video cassette recorder.
AUDIO L, R (Left and Right Audio outputs): Connect to the audio inputs of additional video equipment such as a video cassette recorder or audio system.

④ EURO AV1 ⇆ (Input, Output) Socket
(For TV recording and AV1 playback)
Connect to additional equipment such as a video cassette recorder or LD player.
This socket contains RGB video inputs, Separate video (S-VIDEO) inputs, composite video input, audio input, tuner video and audio outputs.

⑤ EURO AV2 ⇆ (Input, Output) Socket
(For AV-1, AV-3 and AV-4 recording and AV-2 playback)
Connect to additional equipment such as a video cassette recorder or LD player.
This socket contains Separate video (S-VIDEO) inputs, composite video input, audio input, video and audio outputs for monitoring.

⑥ VARIABLE AUDIO ⇆ (Output) Jacks
(Left and Right Variable Audio Outputs)
Connect to the Audio auxiliary inputs of your Hi-Fi audio system. You can listen to the sound of the selected input video via your Hi-Fi system. These outputs are controlled by the volume, bass, treble and balance controls of the Projection TV.

NOTE:
Signals from these output jacks will be affected by AV memory, balance, bass and treble tone adjustments using the →•← /AV MEM button, SOUND button, ◿ +, − button.

⑦ EXTERNAL SPEAKERS Terminals
(L: Left channel/ R: Right channel)
Connect to additional loudspeakers (purchased separately, see page 14).

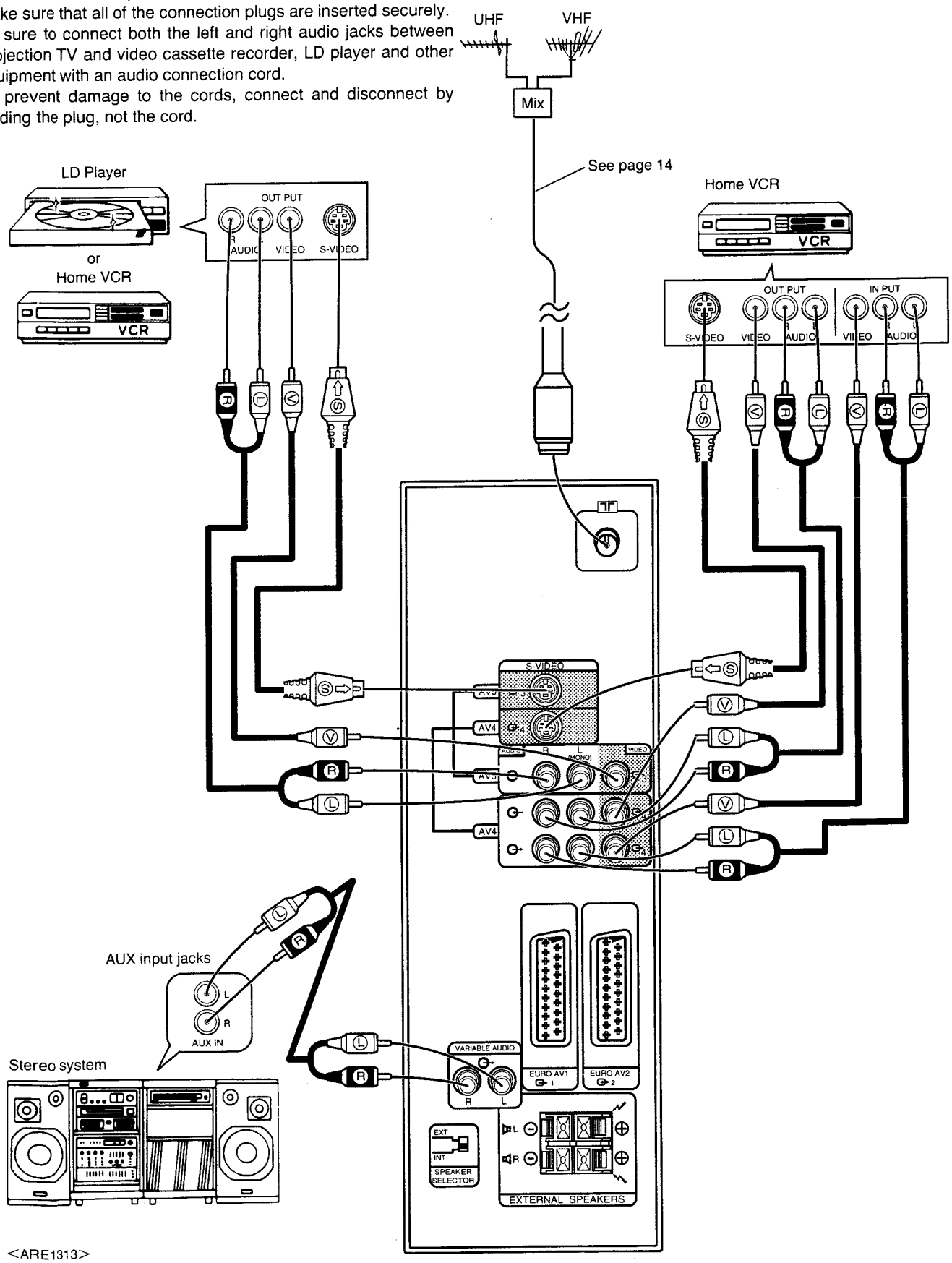
⑧ SPEAKER SELECTOR Switch
To select which loudspeakers; internal or external, are used (See page 13).
EXT (External): Output from the EXTERNAL SPEAKERS terminals.
Sound from the internal loudspeakers will be cut off.
INT (Internal): Output from the internal loudspeakers. Sound from the EXTERNAL SPEAKERS terminals will be cut off. Normally set switch to this position.

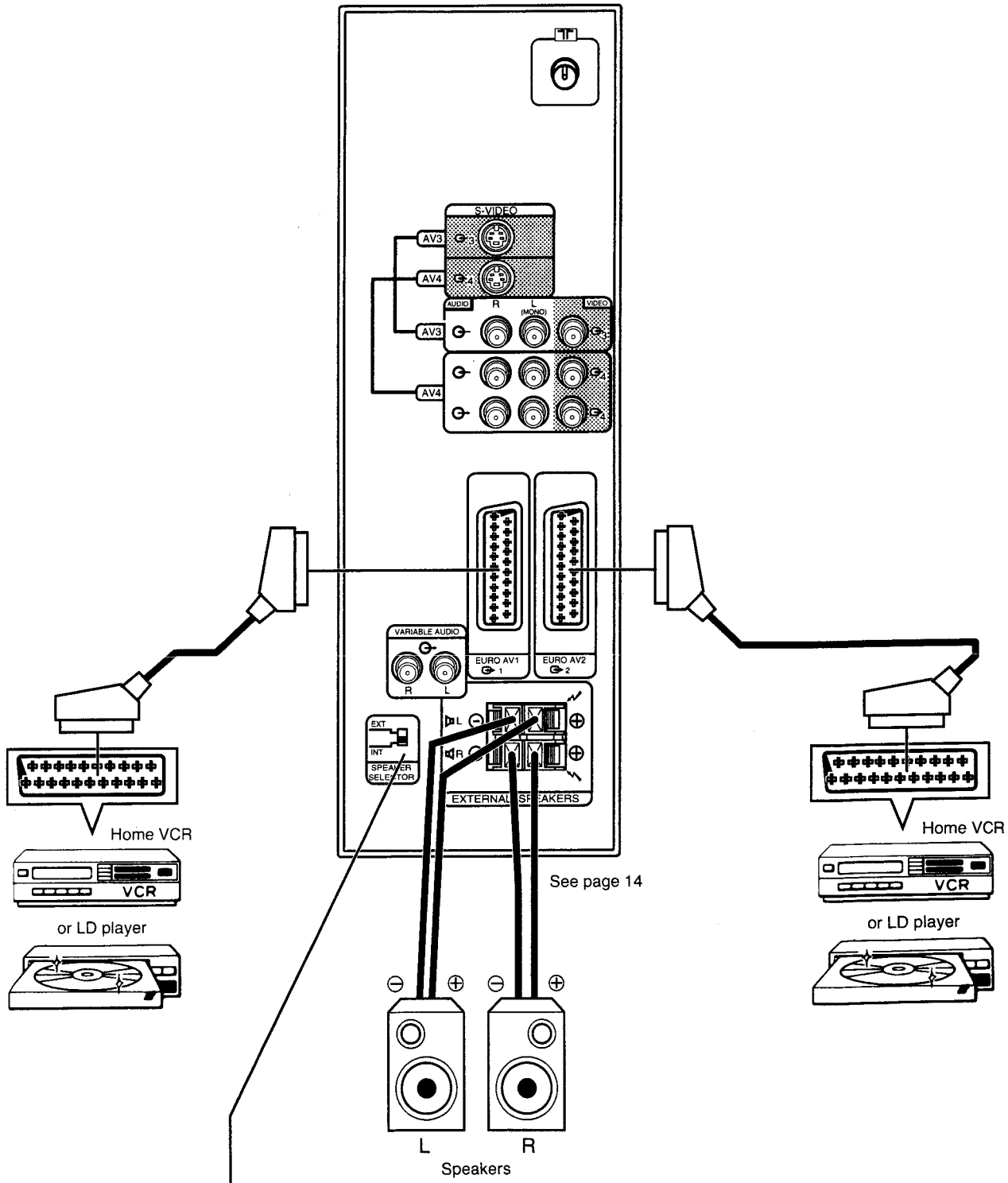
CONNECTIONS

Refer to the operating instructions for your video cassette recorder, LD player and other equipment for details on how to make connections.

■ Turn off all the components before making connections.

- Make sure that all of the connection plugs are inserted securely.
- Be sure to connect both the left and right audio jacks between Projection TV and video cassette recorder, LD player and other equipment with an audio connection cord.
- To prevent damage to the cords, connect and disconnect by holding the plug, not the cord.





See page 14

SPEAKER SELECTOR SWITCH

Set this switch to the INT position if you will be listening to the built-in loudspeakers. If you have connected external loudspeakers (or if you will be listening through your stereo system), then you can turn off the built-in loudspeakers by setting the switch to the EXT position.

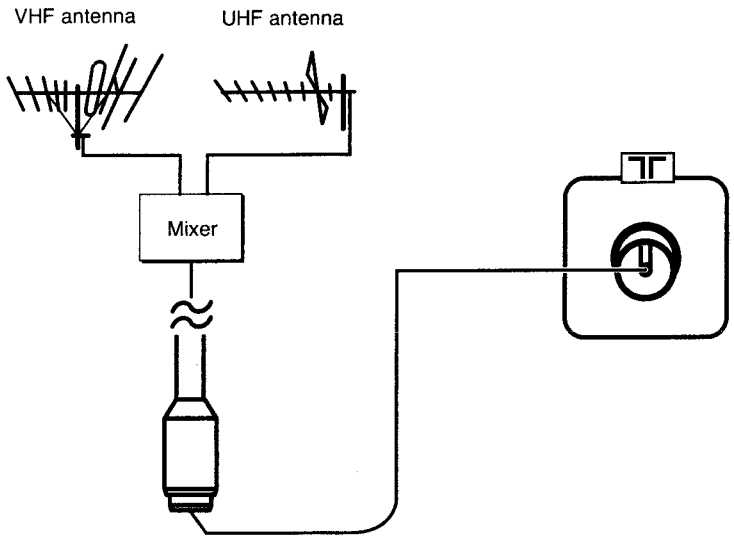
ANTENNA CONNECTIONS

A good color picture, good stereo sound and teletext operation depends on a good TV signal. To ensure the highest signal quality, choose an antenna that suits your reception area and have it properly installed. Ask your dealer for advice.
Of course, if you will be subscribing to cable or have a central antenna for your building, then you will not need an external antenna. However, proper connections from the TV signal source to your Projection TV are essential. Please refer to the instructions below.

USING THE ANTENNA CABLE CONNECTOR

The cable connector plugs into the Projection TV's antenna terminal. This unit is designed to connect to a 75 Ω coaxial cable using a TV coaxial plug.

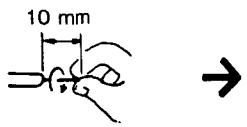
Connect the antenna cable connector into the ⊓ (antenna) terminal.



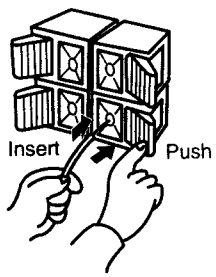
LOUDSPEAKERS

CONNECTING EXTERNAL LOUDSPEAKER WIRES

Turn off the power of the Projection TV.



Strip each wire so that about 10 mm is exposed. Twist the core.



Push the lever, insert the wire, and release the lever back to lock the wire into place. Pull gently on the wire to check that it is securely connected.

Do this for each wire. Be careful to connect the right loudspeaker's plus and minus terminal wires to the "R" "+" and "–" terminals. Likewise, connect the left loudspeaker's plus and minus terminal wires to the "L" "+" and "–" terminals.

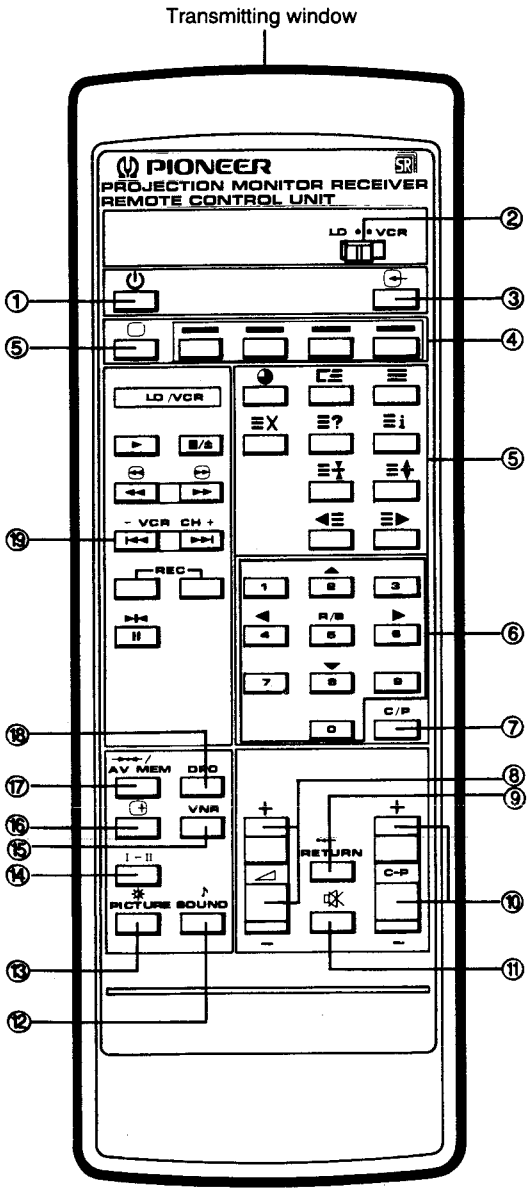
Precautions

- Be sure that exposed wires do not protrude and touch each other.
- If you do not hear a normal stereo image when listening to a stereo program, it may be because the "+" and "–" connections are reversed for one of the external loudspeakers.
- Make sure that the right loudspeaker is connected to the "R" terminals and the left loudspeaker to the "L" terminals.
  Make sure that each loudspeaker's two wires are properly connected to the appropriate "+" and "–" terminals.

NOTES:

- *Use loudspeakers with an impedance rating of 8 Ω to 16 Ω.*
- *Ordinary loudspeakers are not magnetically shielded and may disturb the picture if placed too close to the Projection TV. If you notice a problem, move the loudspeakers about 60 cm away from the Projection TV.*

REMOTE CONTROL UNIT FACILITIES



① Standby Button (⏻)
Press to turn the Projection TV to STANDBY.

② LD .. VCR Switch
(PIONEER LaserDisc/PIONEER Video Cassette Recorder)
To select the remote control function mode of the LD/VCR remote control buttons; either LD or VCR.

③ Input Selector Button (⊕)
Press to select TV or input source you wish to watch.

TV → AV1 → AV2 → AV3 → AV4

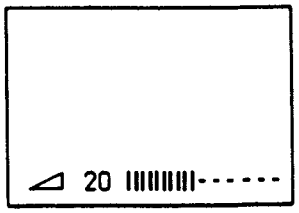
④ Green, Yellow, Blue and Red Colored Buttons
Press to select pages for the TOPTEXT or FASTEXT. For details, see page 35.

⑤ Teletext Operation Buttons and Teletext Cancel (▢) Button
Press to select teletext operations.
Press the ▢ button to cancel the Teletext function.
For details, see pages 35 to 40.

⑥ Numeric Buttons (0 to 9)/ Power ON
Press to select a TV channel or program directly. While Teletext is engaged, press to select Teletext page you wish to search. If the power is off, pressing these buttons turns the power on.
2 (▲ : Up), 4 (◀ : To the left), 5 (R/B : To select Red or Blue), 6 (▶ : To the right) and 8 (▼ : Down) buttons are used to adjust color convergence when the convergence adjustment mode is engaged.

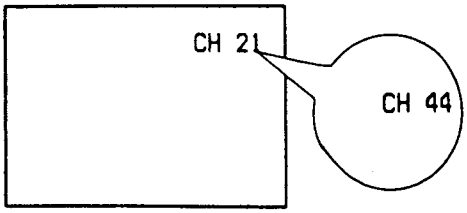
⑦ C/P (Channel/Program) Button
Press to select either channel number or program number when tuning to a television broadcast.

⑧ ◿ (Volume) +,−/Adjust +,− Buttons
Press the + button to increase the volume, and the − button to decrease it.
Volume adjustment will appear on the screen as numbers and a bar-graph. '63' indicates the maximum volume level. The display will disappear from the screen after 4 seconds.
Adjustments for SOUND items (bass, treble and balance) or PICTURE items (color, tint, contrast, brightness and sharpness) can also be made.
First press the SOUND or PICTURE button the necessary number of times to select the item to be set.
Then adjust the level using the (+) and (−) buttons.

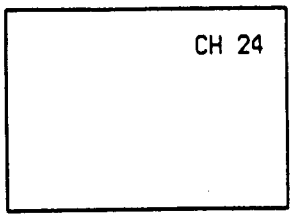


NOTE:
When using this button to control the volume after having used it for the Adjust function, make sure that the picture or sound adjustment display has disappeared.
This button will operate as the picture or sound ajustment as long as a picture or sound adjustment display appears on the screen.

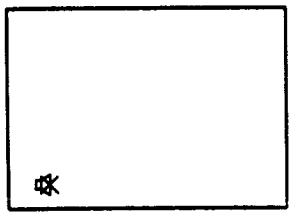
⑨ RETURN Button (↤)
Press to switch between the current channel or program and the channel or program you were watching immediately before. This is useful, for example, if you wish to switch back and forth between two sporting events.



⑩ C-P (Channel - Program) +, − Buttons
Press the C-P (+) or C-P (−) to scan up or down among the channels or programs.



⑪ (Mute) Button
Press to temporarily turn off the sound, and again to return to the previous volume level. This is useful, for example, when you get a phone call.
The (Mute) display will appear in red while mute is engaged.
If the mute function is left on for over approx. 8 minutes, the function will be cancelled automatically, and the volume level will be reset to 0.
The mute display will disappear from the screen when the mute is cancelled.



⑫ SOUND Button (♪)
Press to select the sound parameter to be adjusted.

(Bass) → (Treble) → (Balance)

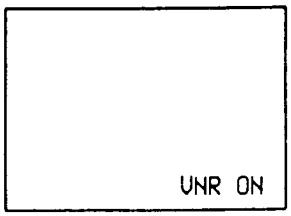
⑬ PICTURE Button ( )
Press to select the picture parameter to be adjusted. The display will appear on the screen if the NTSC or 4.43 NTSC color system is selected by pressing the PRESET MENU SELECT/ADJ button. Tint display will appear on the screen while NTSC or 4.43 NTSC signal is played back when AUTO color system mode is selected. (See preset menu operation "SELECTING THE COLOR SYSTEM".)
- The Tint adjustment is possible when the input signal is the NTSC or 4.43 NTSC.

(Color) → (Tint) → (Contrast)
(Sharpness) ← (Brightness)

⑭ I-II (TV Sound Mode) Button
Press to select the reception TV sound mode.
The switching sequence is as follows.

DUAL I → DUAL II
DUAL I /II

⑮ VNR (Video Noise Reduction) Button
You can turn VNR on or off as desired. When VNR is on, the noise on the screen is reduced. For details, see page 23.

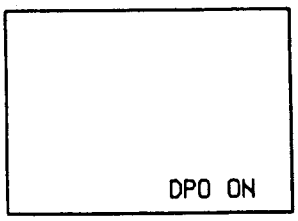


⑯ (Display) Button
Press once to display the current channel and other information on the screen.

⑰ /AV MEM (Standard/AV Memory) Button
Press to switch between the standard (STD) picture/sound quality settings and your AV MEMORY 1, 2, 3, 4 and S-BRITE settings. This button only recalls settings stored in AV MEMORY. To put the current picture/sound settings into AV MEMORY, use the control panel PRESET MENU buttons. For details, see page 28.

STANDARD → AV MEMORY 1 → AV MEMORY 2
↑ ↓
DISPLAY OFF
(Temporary memory mode)
↑ ↓
S-BRITE ← AV MEMORY 4 ← AV MEMORY 3

⑱ DPO (Dynamic Picture Optimizer) Button
You can turn DPO on or off as desired. When DPO is on, it automatically adjusts the picture to compensate for room illumination. For details, see page 27.



⑲ LD/VCR (LaserDisc/Video Cassette Recorder) Operation Buttons
Press to operate a PIONEER LD player or video cassette recorder. For details, see page 17.

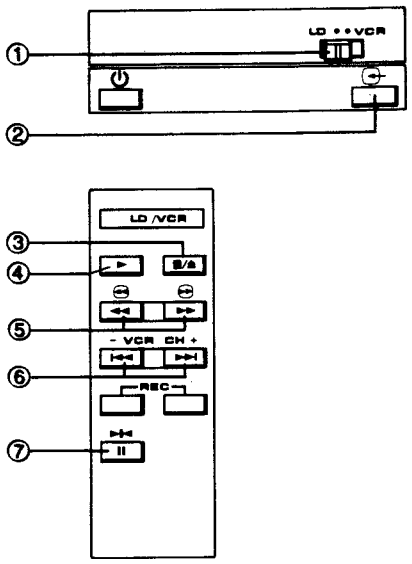
Control buttons for a PIONEER LD Player and VCR

If your LD (LD Player) or VCR is a PIONEER model, your Projection TV's remote control unit can perform most of the basic operations. The LD/VCR switch is used to select whether the remote control unit operation buttons will function as LD player or VCR control buttons.

PIONEER LD Player Control

Turn on your LD player before operating.

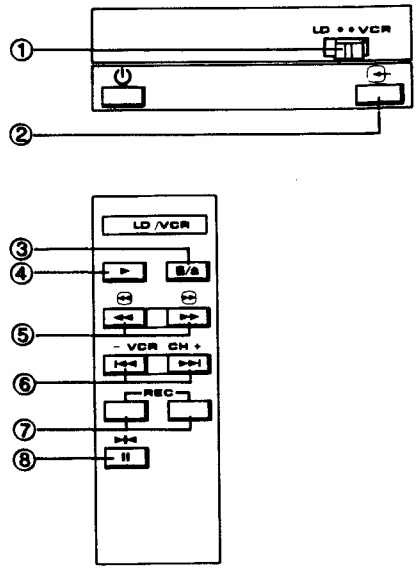
① **Set the LD/VCR switch to LD.**
② **Press the ⊖ button repeatedly to set the input selector to the AV connector/terminal to which the LD player is connected.**
③ **Stop/Eject (■/⏏) button**
Press once to stop playback, twice to eject the disc.
④ **Play (▶) button**
Press to begin playback.
⑤ **Scan (⊖ / ⊖) button**
Press the ▶▶ side of the button to search in the forward direction while playing the videodisc.
Press the ◀◀ side of the button to search in the reverse direction while playing the videodisc.
⑥ **Chapter Skip (⏮/⏭) button**
Press the ⏭ side of the button to skip directly to beginning of the next chapter, press the ⏮ side to skip directly back to the beginning of the chapter currently in play. This operation can only be performed on an LD Player with a chapter skip function.
⑦ **Pause/Still (II/⏭) button**
Temporarily interrupts playback.



PIONEER VCR Control

Turn on your VCR before operating.

① **Set the LD/VCR switch to VCR.**
② **Press the ⊖ button repeatedly to set the input selector to the AV connector/terminal to which the VCR is connected.**
③ **Stop/Eject (■/⏏) button**
Press once to stop playback, twice to eject the tape.
* Eject function will be performed only if your VCR is equipped with the remote control eject function.
④ **Play(▶) button**
Press to begin playback.
⑤ **Rewind/Fast Forward (⊖/⊖) button**
This button allows high-speed movement through parts of the tape that you don't wish to watch. Press the left side of the button to rewind the tape, and the right side to advance.
During playback, use this button to search visually forward or backward.
⑥ **VCR CH (Channel) +/– button**
Press to select the channel of the TV tuner on the VCR.
⑦ **REC (Record) buttons**
Press both buttons at the same time to start recording.
⑧ **Pause/Still (II/⏭) button**
Temporarily interrupts recording or playback, producing a still picture during playback.



TV CHANNEL SELECTION

The Projection TV uses a frequency synthesizer tuning system to permit reception of the B/G, I, D/K, L and L′ reception standards and enables reception more than 350 channels world-wide using 5 channel tables (see pages 42 to 44).
You can use the "+" or "−" marked C-P button on the remote control unit or the control panel on the Projection TV to skip through the TV channels one by one, or you can use the remote control unit numeric buttons "0" through "9" to directly enter the channel or program number.

To select a TV channel directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the CH/PR button to select "CH".

Example:

To select CH 9	Press 9 (or press 0, then 9)
To select CH 59	Press 5, then 9
To select CH 20	Press 2, then 0

NOTE:
When selecting a two-digit channel number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the channel number.

To select a program number directly

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the CH/PR button to select "PR".

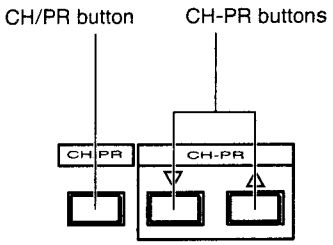
Example:

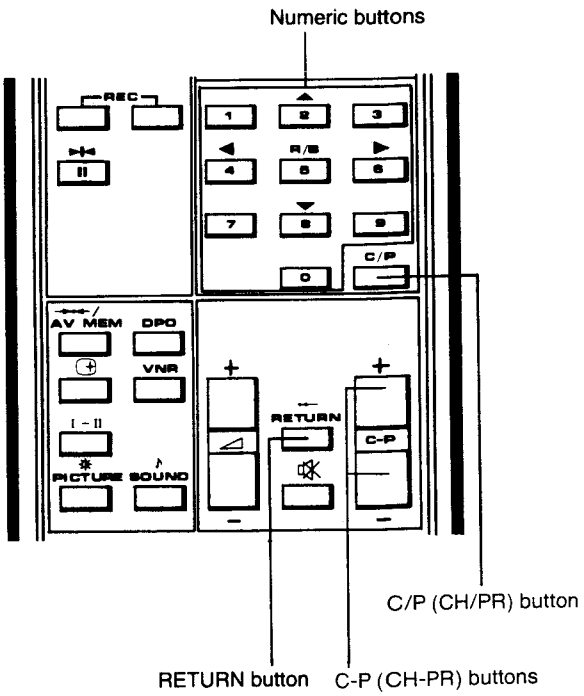
To select PR 7	Press 7 (or press 0, then 7)
To select PR 39	Press 3, then 9
To select PR60	Press 6, then 0

NOTE:
When selecting a two-digit program number, press the 2nd numeric button within 2 seconds of pressing the 1st numeric button. If the second number is not pressed within 2 seconds, the first number is selected as the channel number.

If you wish to watch the previously selected channel
Press the RETURN button of the remote control unit. The TV channel or programmed channel selected immediately prior to the current one will appear.

To return to the original TV channel or programmed channel, press the RETURN button again.

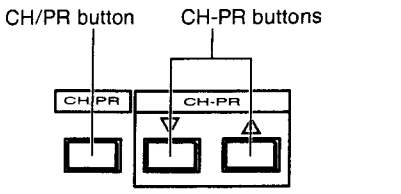


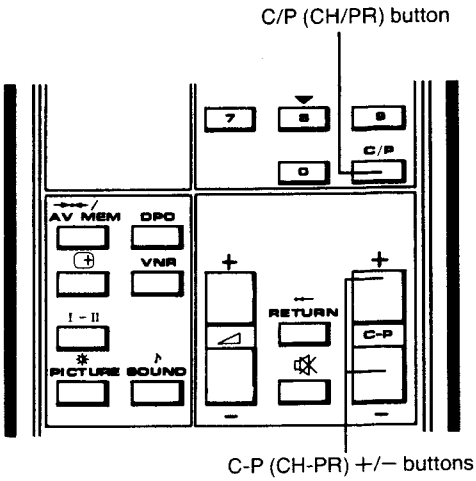


To select a TV channel with the +/− CH-PR buttons

1. If the power is off, press the "0" through "9" numeric buttons to select the channel directly, as described above; or press the ⏻ button on the front panel and press the ⊕ button until a TV program appears.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the CH/PR button to select "CH".
3. Press the △ (+) button to move to the next (higher) channel.
   Press the ▽ (−) button to move to the previous (lower) channel.

If you wish to move through the TV channels rapidly, press and hold the button.



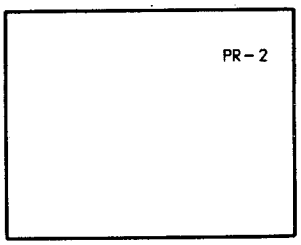


To select the programmed TV channels

1. If the power is off, press the "0" through "9" numeric buttons to select the channel directly, as described above; or press the ⏻ button on the front panel and press ⊕ button until a TV program appears.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the CH/PR button to select "PR".
3. Press the △ (+) button to move to the next (higher) program number.
   Press the ▽ (−) button to move to the previous (lower) program number.

If you wish to move through the programmed channels rapidly, press and hold the button.

To add or delete channels from programmed channel memory, refer to STATIONS STORING on page 31.



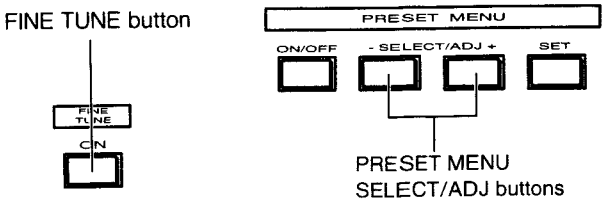
Fine tuning

In areas with poor reception and in the case of stations where the transmission frequencies deviate from those given in the channel tables, it may prove necessary to improve the picture and sound quality by means of fine tuning.

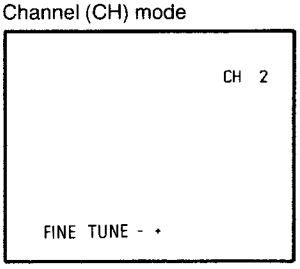
1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. Press the FINE TUNE button. The FINE TUNE display will appear on the screen.
3. Press the PRESET MENU + or − button to adjust the tuning of the picture and sound as clearly as possible. The mark on the screen (+ or −) will flash while the button is pressed.
4. When fine tuning is completed:
   Press the FINE TUNE button again. The FINE TUNE display will disappear from the screen.

NOTE:

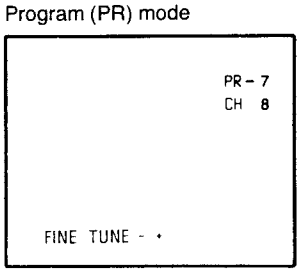
- *Fine tuning will be cancelled automatically when another TV channel or programmed channel is selected. Fine tuning is necessary if the selected TV program cannot be seen clearly or when distorted sound is heard.*



Channel (CH) mode



Program (PR) mode

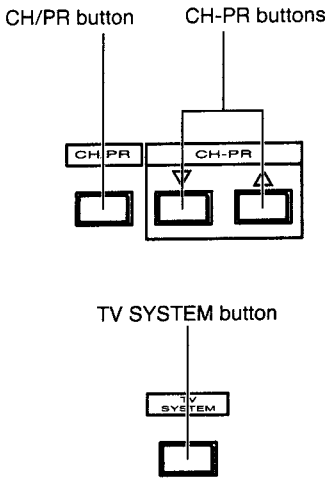


TV system setting

This Projection TV can select the follwing TV systems while tuned into a TV channel:
B/G, I, D/K, L and L′ systems.

1. Press the "0" through "9" numeric buttons to input the desired channel ; if the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "CH" appears, press the CH/PR button to select "PR".
3. Press the TV SYSTEM button to select a TV system on the front panel. TV system display will appear on the screen in the following sequence:

   → B/G → I → L → L′ → D/K →

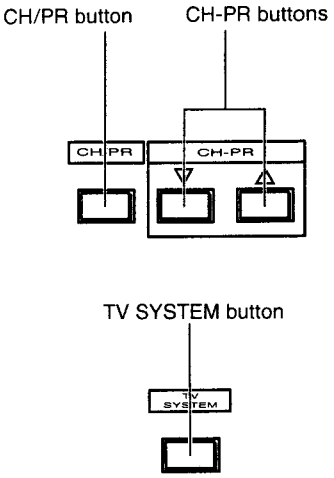


Channel table selection

This Projection TV tuner has 5 sets of channel tables (refer to pages 42 and 44 for details).
You can select the most suitable channel table for your area for watching TV programs.

1. Press the "0" through "9" numeric buttons to input the desired channel. If the power is off when the buttons are pressed, the power will be turned on.
   The selected number appears on the screen, along with "CH" (channel) or "PR" (program).
2. If "PR" appears, press the CH/PR button to select "CH".
3. Press the TV SYSTEM button on the panel. Channel table display will appear on the screen in the following sequence:

   → TABLE A → TABLE B → TABLE C → TABLE D → TABLE E →

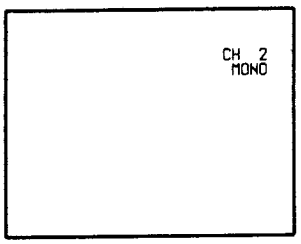


SOUND MODE SELECTION

This Projection TV incorporates the following tuner STEREO SYSTEMS:
1) GERMAN/CCIR/A2 ANALOG 2 CARRIER SYSTEM (B/G)
2) NICAM DIGITAL STEREO (B/G,I)

Selecting dual TV sound program

If the TV system is set to B/G, CCIR 2 carrier analog system can be decoded when broadcasted. You can select stereo or monaural sound and original or second language audio while watching a TV program.
If STEREO appears on the screen for approximately 4 seconds: The program is being broadcast in stereophonic sound.

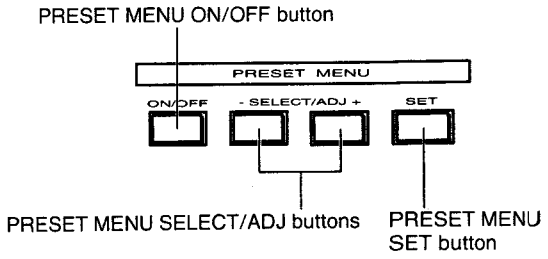


NOTE:
The TV sound decoder will select stereo sound or monaural sound automatically, according to the sound mode of the TV program.

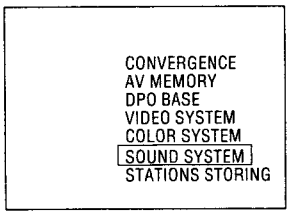
Selecting monaural sound

If you wish to listen to monaural sound while a stereo sound program is being received; or if you hear a lot of static while receiving a stereo sound program.

1. Turn the Projection TV on and select a TV station.
2. Press the PRESET MENU ON/OFF button to turn the operation menu on.
   Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until SOUND SYSTEM turns red, and then press the PRESET MENU SET button.

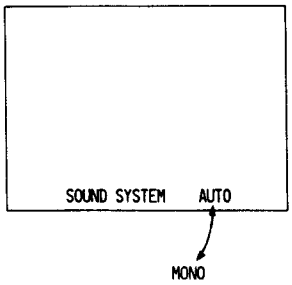


■ Preset Menu

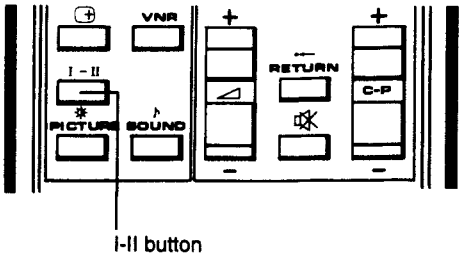


4. Press the PRESET MENU SELECT/ADJ buttons to select SOUND SYSTEM MONO.
5. After selecting the sound system, press the PRESET MENU SET button to memorize the setting.
6. Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.

■ Sound System selection



Dual sound reception



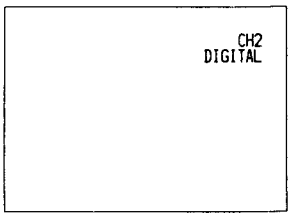
I-II button

If DUAL I, II or I/II appears on the screen:
The program is being broadcast in two languages. You can select between the original and second language audio signals by pressing the I - II button.
The switching sequence is as follows:

→DUAL I (original language)→DUAL II (second language)→
←DUAL I/II (original and second language)←

When you select the SOUND SYSTEM to SOUND SYSTEM MONO, TV sound decoder always select the original language audio signal.

NICAM system mode setting



If the TV system is set to B/G or I, NICAM DIGITAL SOUND can be received.
In some countries and/or with some stations, the television sound is broadcast using the digital NICAM system, instead of the conventional analog stereo sound system.

If DIGITAL STEREO appears on the screen for approximately 4 seconds, the program is broadcast in NICAM stereophonic sound.
If DIGITAL appears on the screen for approximately 4 seconds, the program is only broadcast in NICAM monaural sound.

NOTE:
- *If the SOUND SYSTEM mode is selecting the SOUND SYSTEM AUTO, the Projection TV will automatically select the digital sound system instead of conventional sound system.*

- *In some countries, NICAM pilot signal is transmitted during the transmission of a programme with MONO sound.*
  In such cases the display will indicate DIGITAL STEREO instead of MONO.
  This is not a malfunction. If in doubt, please check your TV programme guide.

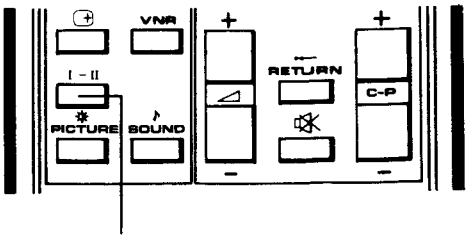
The NICAM sound may be disturbed by hissing or crackling noises due to a weak station signal. This interference can be eliminated by switching over from NICAM to analog (conventional) FM mono reproduction.
In this case, switch the SOUND SYSTEM to SOUND SYSTEM MONO.

NICAM Dual sound reception

If DIGITAL DUAL I or (II or I/II) appears on the screen:
The program is broadcast in two NICAM languages. You can select between the original language and second language digital audio signals by pressing the I - II button.

The switching sequence is as follows:

DUAL I → DUAL II → DUAL I/II

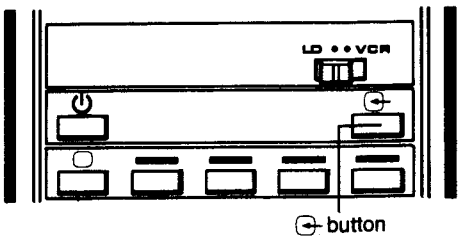


I-II button

ADDITIONAL OPERATIONS

Input source selection

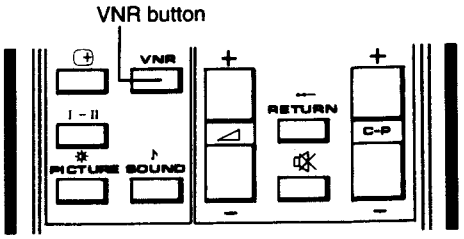
To select video input source step by step:
Press the ⊕ button on the control panel or the remote control unit repeatedly until the desired input source appears on the screen.

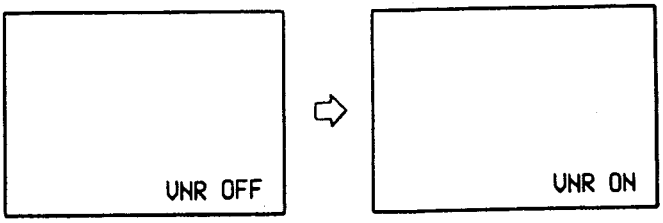


VNR (Video Noise Reduction) system operation

To improve picture quality with VNR while watching a TV program or prerecorded video cassette tape
VNR system will reduce noise contained in the video signal and improve the picture quality of TV programs or video tape playback pictures.
Press the button once to display the VNR mode (VNR ON or VNR OFF) on the screen, then press the button once or twice to select either VNR ON or VNR OFF.

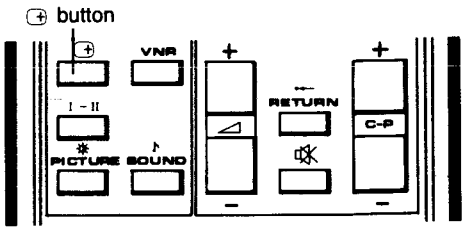
- When RGB input from the AV-1 socket is selected, VNR ON will appear on the screen but the VNR system will not function.





To confirm picture and sound information on the screen

Press the ⊕ button to display the information on the screen. Four seconds later, the information display will disappear.



To record from video equipment connected to the AV-1, AV-3 or AV-4 terminals to a video cassette recorder connected to the AV-2 terminals

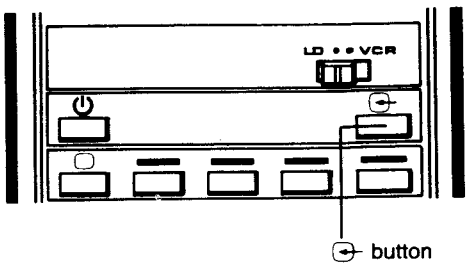
(or record from the AV-1, AV-2 or AV-3 terminals to a video cassette recorder connected to the AV-4 OUTPUT terminals)

1. Turn the power on, and select the video source for playback by pressing the ⊕ button of the remote control unit.

2. Connect the recording video cassette recorder to the AV-2 connector.
   * If you wish to use the AV-4 OUTPUT terminals, connect the recording video cassette recorder to the AV-4 OUTPUT terminals.

3. Set the video cassette recorder to recording mode, then start playback of the video equipment connected to the AV-1, AV-3 or AV-4 connector.
   * If you are connecting the recording video cassette recorder to the AV-4 terminals, select an input source from the AV-1, AV-2 or AV-3.

NOTE:
When you switch the input source to AV-2 or AV-4 during recording, recording signals are not output from the AV-2 connector and AV-4 terminals.



PICTURE AND SOUND ADJUSTMENT

The remote control unit has a PICTURE button and a SOUND button. These buttons allow you to adjust color, tint, contrast, brightness, sharpness, bass, treble, and balance.

1 Press the PICTURE button or SOUND button until the item to be adjusted appears.

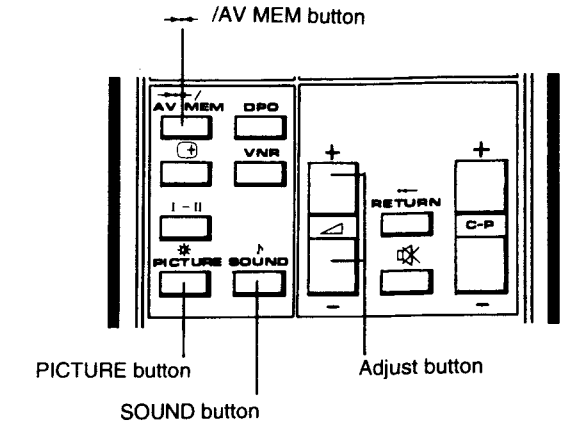
2 Press the Volume + button to raise the value of the selected item. Press the − button to lower it.

Set each item to any value you like; the current value is shown on the screen.

Picture and sound adjustment mode will be cancelled approx. 4 seconds after the Volume + or − button is released.

NOTES:

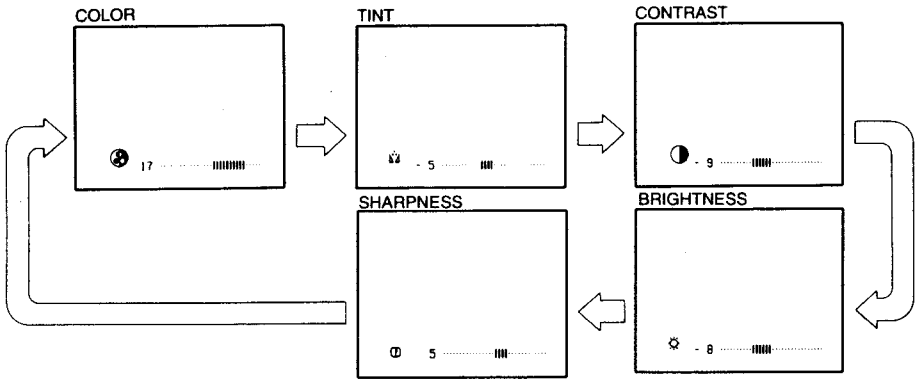
- *The Projection TV has been adjusted before shipping. Please make additional adjustments to suit your personal taste.*
- *These picture and sound quality settings can be stored in the AV MEMORY preset memory. See AV MEMORY on page 28.*
- *To return to the standard settings initially set at the factory, simply press the ⟵ /AV MEM button so that the screen shows STANDARD.*
- *The (Color), (Contrast) and (Brightness) adjustments cannot be selected while the DPO button is on. If you wish to adjust them, turn the DPO off.*
- *When RGB input from the AV-1 socket is selected, (Color), (Tint), (Sharpness) displays will appear on the screen but Color, Tint, Sharpness adjustment will not function.*



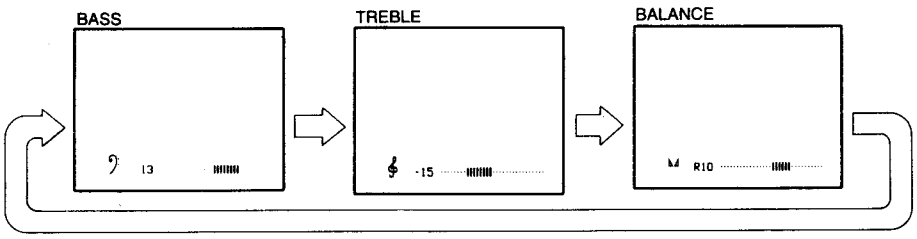
Temporary AV Memory recall

When the display disappears from the screen, the existing AV settings will be stored in the temporary memory mode. In this mode, the Projection TV's temporary AV memory settings will be restored when the power is turned on.

SCREEN INDICATIONS FOR PICTURE ADJUSTMENT



SCREEN INDICATIONS FOR SOUND ADJUSTMENT



NOTES:

- *If the color seems abnormal but cannot be fixed by color or tint adjustment, then you may need to align the color convergence (see page 25).*
- *Bass and treble tone control adjustment ranges will be shown as a value between −32 and +31, and balance adjustment range will be shown as a value between L32 and R31.*
- *During the DPO adjustment and AV memory operation, 'DPO', 'STANDARD', 'AV MEMORY 1', 'AV MEMORY 2', 'AV MEMORY 3', 'AV MEMORY 4' or 'S-BRITE' will be shown on the right side of the screen. When the tone or picture quality controls are adjusted, these displays (except for the 'DPO' display) will disappear from the screen.*
- *The (Tint) adjustment is possible when the NTSC or 4.43 NTSC color system is selected.*
- *The Tint adjustment is possible when the input signal is the NTSC or 4.43 NTSC.*

HOW TO ALIGN COLOR CONVERGENCE

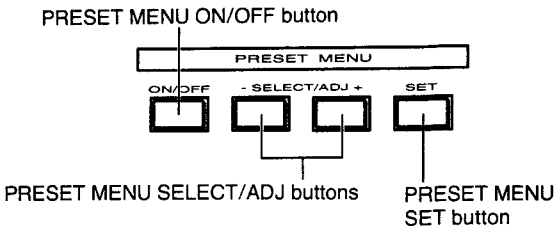
This Projection TV uses three separate picture tubes — a red, a green, and a blue tube. The red, green and blue images are projected onto the screen where they converge to form a full color picture. If they do not converge correctly, then you will see colored borders around the images.
However, convergence may drift over time or if you move the Projection TV.
Follow the steps below if color convergence alignment is needed.

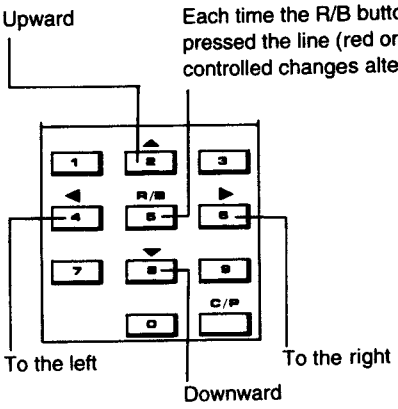
1. Turn on the power and select an active channel. Wait a moment for the picture to stabilize.
2. Press the PRESET MENU ON/OFF button on the control panel. The monitor screen displays the menu (CONVERGENCE, AV MEMORY, DPO BASE, VIDEO SYSTEM, COLOR SYSTEM, SOUND SYSTEM and STATIONS STORING).
   Make sure that "CONVERGENCE" is displayed in red. If not, press the PRESET MENU SELECT/ADJ buttons until "CONVERGENCE" turns red.
3. Press the PRESET MENU SET button on the control panel. If color convergence is correct, there will be one vertical white line and one horizontal white line, as in figure 1.
4. If you see separate colored lines (Fig. 2 to 4), use the R/B, ◀, ▶, ▲ and ▼ buttons on the remote control unit to make the red and blue lines disappear into the other lines.
   Each time the R/B button is pressed, the line to be controlled (red or blue) alternates.
   Pressing the ◀ button moves the vertical line to the left, while pressing the ▶ button moves the vertical line to the right.
   Pressing the ▲ button moves the horizontal line upward, while pressing the ▼ button moves the horizontal line downward.
   In figure 2, for example, press the R/B button to control the red line, and then press the ◀ button until the red line converges.
   Press the R/B button again to control the blue line, and then press the ▼ button until the blue line converges.
   Convergence is correct when all three colors (red, green and blue) converge, producing a single white line.

NOTE:

An active channel picture will appear on the screen when pressing the R/B button during convergence adjustment.
You can adjust convergence while watching an active channel screen instead of the convergence alignment screen as in the above procedure.

5. Press the PRESET MENU ON/OFF button when convergence is correct.





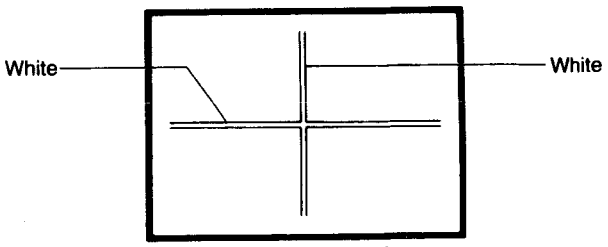


Fig. 1 Correctly aligned

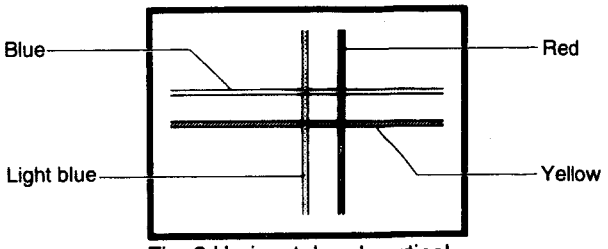


Fig. 2 Horizontal and vertical misalignment

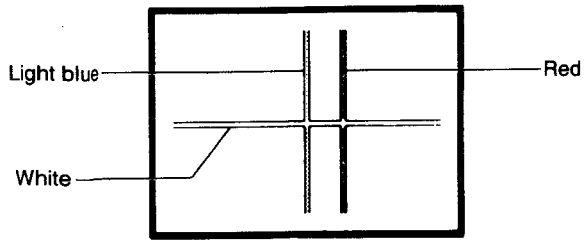


Fig. 4 Horizontal misalignment

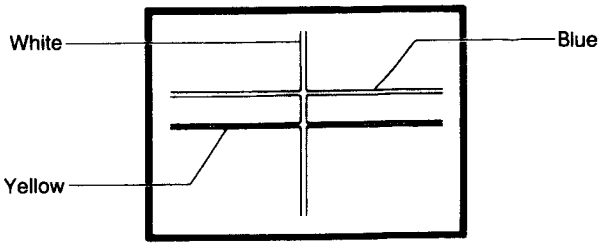
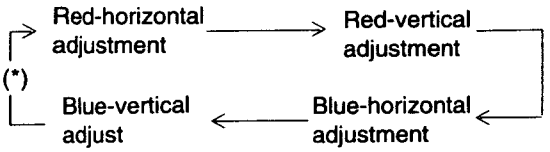


Fig. 3 Vertical misalignment

Color convergence alignment without using the remote control unit

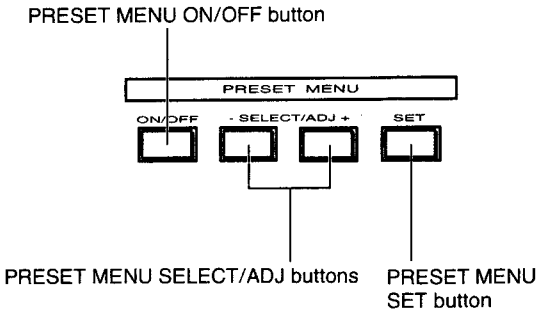
Color convergence adjustment can be performed by either the operation buttons of the remote control unit as described in operation 4 of the above procedures, or the PRESET MENU SELECT/ADJ buttons and PRESET MENU SET button on the control panel as described below:

① **Press the PRESET MENU SET button to select the adjustment mode. The adjustment modes appear in the following order:**
- Convergence adjustment test pattern and arrow will appear on the screen accordingly.



* Alignment proof mode; selected image appears.

② **Use the PRESET MENU SELECT/ADJ buttons as follows:**
During Red or Blue Vertical adjustment:
Press the + button to move the horizontal line upwards.
Press the − button to move the horizontal line downwards.
During Red or Blue Horizontal adjustment:
Press the + button to move the vertical line to the right.
Press the − button to move the vertical line to the left.



DPO ADJUSTMENT

When the DPO (Dynamic Picture Optimizer) switch is on, the Projection TV automatically adjusts the contrast, brightness and color to match room lighting conditions. This is done according to factory preset specifications which ordinarily do not need to be changed. However, if the DPO is giving you too bright or too dim a picture, you can change its response by following these directions.

DPO adjustment is necessary under the following conditions:

Room conditions	TV screen condition	Adjustment
Dim light	Too much brighter than room lighting	DPO DARK Adjustment
Bright light	Dark TV screen (Picture cannot be seen clearly)	DPO LIGHT Adjustment

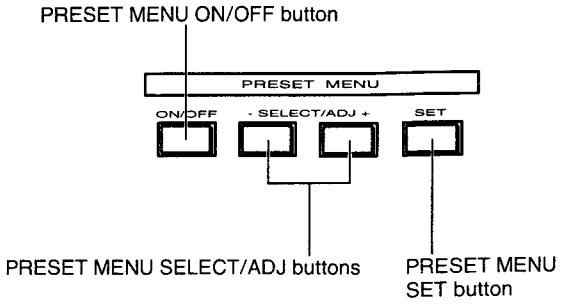
1. Under dim or bright room lighting conditions while watching a TV show, video tape or video disc.
2. Turn on the PRESET MENU ON/OFF button and press the PRESET MENU SELECT/ADJ buttons until the DPO BASE display turns red.
3. Press the PRESET MENU SET button. "DPO LIGHT" and "DPO DARK" appear on the screen.
4. Press the PRESET MENU SELECT/ADJ buttons to select the adjustment as follows:
   Bright room → select DPO LIGHT
   Dim room → select DPO DARK
5. Press the PRESET MENU SET button. " (Color)", (" (Contrast)" and " (Brightness)") appears on the screen.
6. Press the PRESET MENU SELECT/ADJ buttons to adjust the " (Color)".
7. Repeat steps 5 and 6 to adjust the other two adjustment items " " (Contrast) and " " (Brightness).
8. Press the PRESET MENU ON/OFF button after all adjustments are completed.

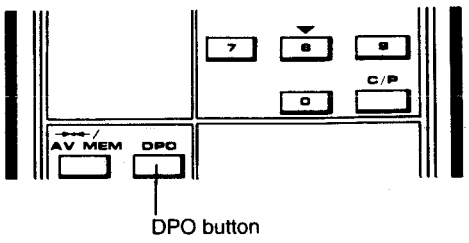
On the DPO system and AV MEMORY system

When the DPO system is turned off, the Projection TV picture will be set according to its original picture data (reference AV MEMORY data, memorized AV MEMORY 1, 2, 3 or 4 data).
When the DPO system is turned on, the Projection TV picture will be set according to a combination of the original AV MEMORY data (reference AV MEMORY data, AV MEMORY 1, 2, 3 or 4 data) and the DPO adjustment data.

Attention
The following picture adjustments should not be performed when the DPO system is engaged.
They are automatically adjusted to the proper level by the DPO microcomputer according to lighting conditions when the system is turned on.
If you wish to adjust these items, turn the DPO system off before making adjustments.

- (COLOR)
- (CONTRAST)
- (BRIGHTNESS)





AV MEMORY

After making adjustments, you can store your picture and tone quality settings in the 4 AV MEMORY presets. Follow the procedure below.

Storing a Setting

1 While watching a TV show, video tape or video disc.
2 Adjust the picture and tone using the PICTURE button, SOUND button and ADJUST buttons.

NOTE:
If tint adjustment is stored to AV memory, NTSC or 4.43 NTSC input signal must be used.

3 Turn on the PRESET MENU ON/OFF button, and press the PRESET MENU SELECT/ADJ buttons until the AV MEMORY display turns red.
4 Press the PRESET MENU SET button.
5 Press the PRESET MENU SELECT/ADJ buttons to select the AV memory (AV MEMORY 1, 2, 3 or 4) in which the setting is to be stored.
6 Press the PRESET MENU SET button.
7 Press the PRESET MENU ON/OFF button to store the setting in AV memory.

NOTE:
Picture or sound item will appear on the screen alternately when the PRESET MENU SET button is pressed repeatedly at operation 6. To adjust the selected item(s), press the PRESET MENU SELECT/ADJ buttons as desired.

Recalling a Setting

Press the ⟷/AV MEM button on the remote control unit.
Each press of the ⟷/AV MEM button moves the selection from STANDARD to AV MEMORY 1, to AV MEMORY 2, to AV MEMORY 3, to AV MEMORY 4, to S-BRITE, Temporary Memory Mode and then back to STANDARD again.
(Press the button while the previous legend is still on the screen. Otherwise, it will return to the STANDARD setting.)

S-BRITE (Soft Brightness)

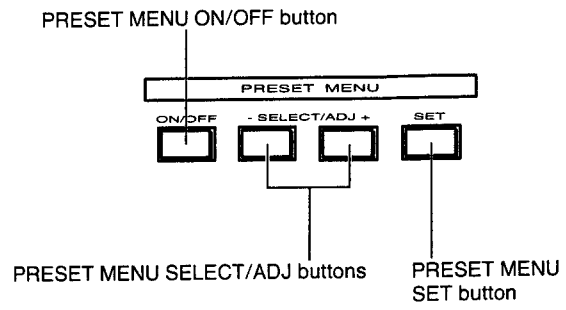
We do not recommend the use of a video game, still picture, or computer due to the potential damage to the CRTs. In the event a consumer needs to use these devices for a short period of time, the "S-BRITE" will minimize potential damage to the CRTs by lowering the relative contrast.

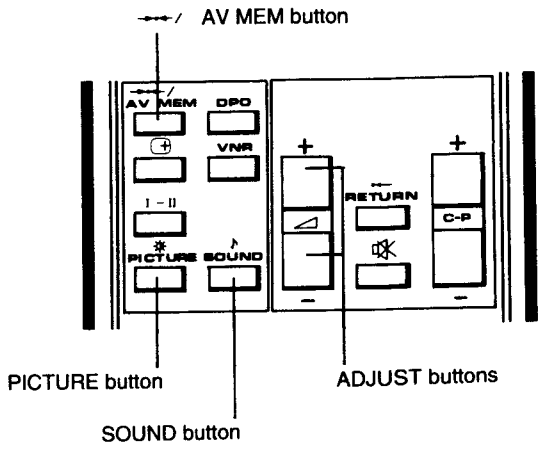
NOTE:
◑ *(Contrast) cannot be adjusted as long as S-BRITE is selected.*

Returning to the Standard Setting

Press the ⟷/AV MEM button so that the screen shows STANDARD.

NOTE:
Adjustments made to the AV memory, bass and treble tone, etc. will only affect the output from the VARIABLE AUDIO jacks.
All other signals output from the Projection TV will be unaffected. Only the original output signal is sent through the Projection TV output jacks.





On the AV Memory assignment

AV memory can be assigned to a selected input source: TV, AV-1, AV-2, AV-3 or AV-4. For example, the AV memory settings for TV can be stored in the STANDARD mode, AV3 settings in AV MEMORY 1, and AV1 settings in AV MEMORY 2.
To select the desired input source press the ⊖ button, then press the⟷/AV MEM button repeatedly to recall the desired settings.

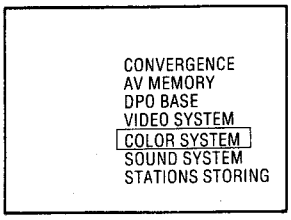
SELECTING THE COLOR SYSTEM

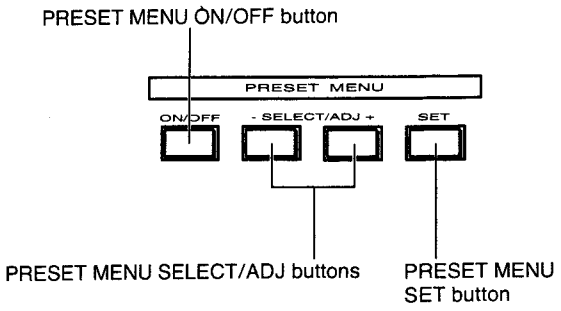
This Projection TV can display an NTSC 4.43 (Modified North American)-based color video source if your video equipment also has this feature. You can watch NTSC 4.43-based prerecorded tape on the Projection TV. The Projection TV can select the color mode automatically between PAL, SECAM, NTSC and NTSC 4.43 depending on the playback video source.

1. Press the input selector for the video source you wish to watch, or press the numeric buttons to select the desired TV channel.
2. Press the PRESET MENU ON/OFF button to turn on the preset menu display.
3. Press the PRESET MENU SELECT/ADJ buttons repeatedly until COLOR SYSTEM turns red.
4. Press the PRESET MENU SET button to select the color system setting.
5. Press the PRESET MENU SELECT/ADJ button to select the desired color system; PAL, SECAM, NTSC or 4.43 NTSC. Select the AUTO color system mode if you wish to watch the PAL, SECAM, NTSC or 4.43 NTSC systems without having to perform any color system selecting operations.
6. Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.

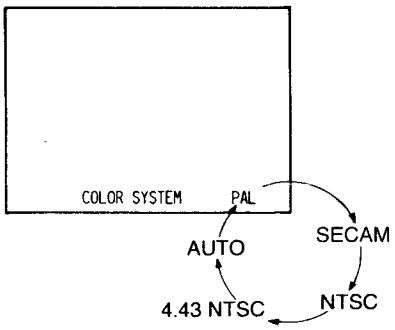
NOTE:
Poor signal quality prerecorded tapes will cause unstable picture reproduction and an off-color picture will be seen.
This is not a malfunction of the Progection TV.

■ Preset menu





■ Color system mode selection



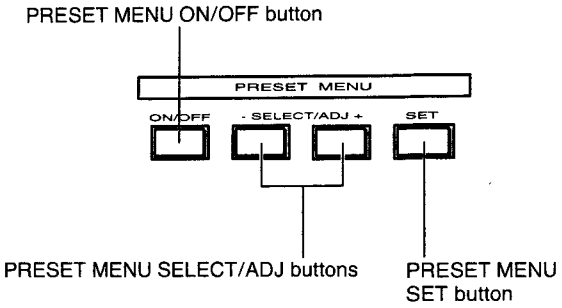
VIDEO SYSTEM SETTING

This operation will select the input source of the AV-1 and AV-2 EURO connectors and AV-3 and AV-4 CINCH SOCKETS of the Projection TV. This selection determines what video input system will be used when the AV-1, AV-2, AV-3 or AV-4 is selected. If your connected video equipment has S-VIDEO features, select S-VIDEO video input system for the best picture quality reception. This Projection TV offers the following video input systems.

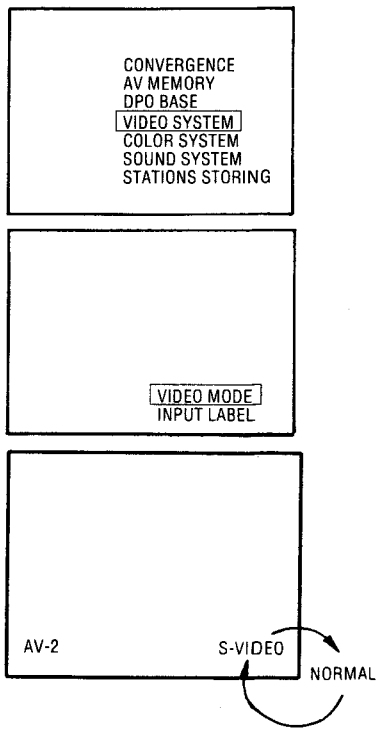
S-VIDEO: Separated Luminance and Chrominance video signal input.
NORMAL: Standard composite video signal input.

1. Turn on the power.
2. Press the ⊕ button to select the input source for which you wish to set the video input system.
3. Press the PRESET MENU ON/OFF button to display the preset menu on the screen.
4. Press the PRESET MENU SELECT/ADJ buttons repeatedly until VIDEO SYSTEM turns red.
5. Press the PRESET MENU SET button to select VIDEO SYSTEM.
6. Press the PRESET MENU SELECT/ADJ buttons until VIDEO MODE turns red.
7. Press the PRESET MENU SET button to select VIDEO MODE.
8. Press the PRESET MENU SELECT/ADJ buttons to select the desired video input system as follows:
   NORMAL: Composite (Mixed) video input system is selected.
   S-VIDEO: Separated luminance and chrominance video input system is selected.
9. Press the PRESET MENU ON/OFF button to remove the preset menu from the screen.

NOTE:
- *Most video equipment uses the composite video input system.*
- *When using AV-3 and AV-4 S-VIDEO terminals to connect video equipment, the S-VIDEO video mode must be selected.*



■ **Preset menu**



RGB operating mode

This operating mode is provided for connection of home computers, video games, interactive video text decoders, etc. Connect to the AV-1 socket.

If the other unit supplies an RGB signal for external synchronization using a switching voltage, you can assign the appliance in question to AV-1.(for details, refer to the operating manual of the other unit). Before switching over from RGB to television mode, switch off RGB signal source.

NOTE:
When RGB input from the AV-1 socket is selected, Color, Tint (NTSC or 4.43 NTSC), Sharpness and VNR ON will appear on the screen but will not function.

STATIONS STORING

Refer to the television channel table before using the TV stations storing feature.
See pages 42 to 44 "TV CHANNEL SELECTION".

1. Turn the Projection TV on and select a TV station.
2. Press the PRESET MENU ON/OFF button to turn the operation menu on. Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button.
4. Press the PRESET MENU SELECT/ADJ buttons until STATIONS PRESET turns red, and then press the PRESET MENU SET button.
5. Press the PRESET MENU SELECT/ADJ button to select the desired program number. Selected program number will flash on and off, and then press the PRESET MENU SET button.
6. Press the PRESET MENU SELECT/ADJ buttons to select the TV channel as follows:
   Use the + button to increase channel number.
   Use the – button to decrease channel number.
7. Select a channel table under which you wish to store stations by pressing the TV SYSTEM button repeatedly.
8. Press the PRESET MENU SET button to store the tuned-in station. If you wish to change the TV system, press the TV SYSTEM button repeatedly until the desired TV system appears on the screen. For example, if you wish to select D/K system, press the TV SYSTEM button repeatedly until D/K appears on the screen.
9. Press the PRESET MENU SET button to store the TV channel and TV system.
   If you wish to continue the operation, repeat steps 5 thru 9 above.
10. Press the PRESET MENU ON/OFF button when you finish TV station storing.

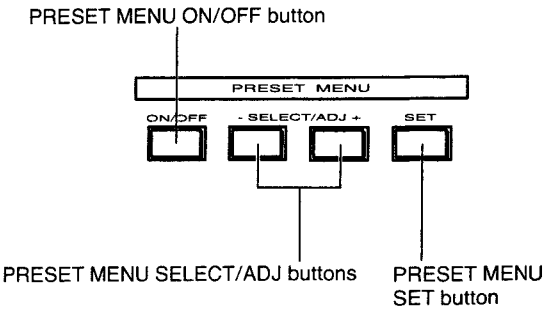
If you wish to replace or re-enter a TV channel

Repeat steps 2 thru 9 above.

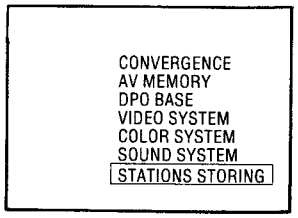
If you wish to directly enter the channel number during TV station presetting

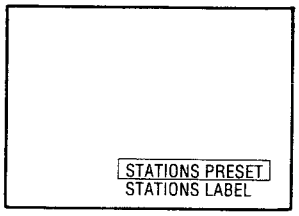
Use the numeric buttons of the remote control unit instead of the PRESET MENU SELECT/ADJ buttons of the Projection TV.

1. After setting the Projection TV in TV station presetting mode, follow steps 1 thru 5 above.
2. Press the numeric buttons as follows:
   Example
   To preset channel 8: Press the 8 button.
   To preset channel 40: Press the 4, then the 0 (zero) buttons.
   To preset channel 33: Press the 3 button twice.
3. Press the PRESET MENU SET button to store the TV channel.

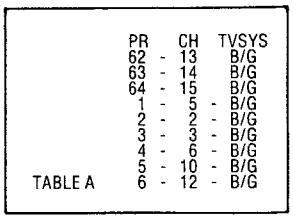


■ Preset Menu





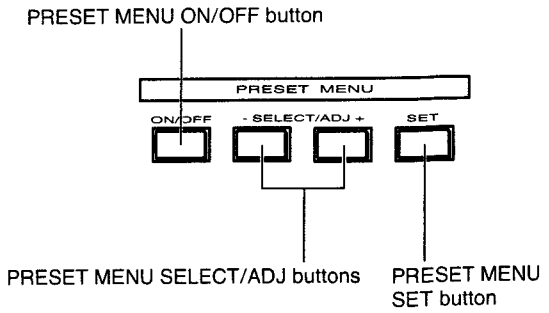
■ Stations Storing Menu



If you wish to delete a programmed TV channel

1. After setting the Projection TV to the TV station presetting mode, follow steps 1 through 5 on page 31.
2. Press the 0 (zero) button, or press the PRESET MENU SELECT/ADJ buttons until "0" appears on the channel display.
3. Press the PRESET MENU SET button to delete the TV station.

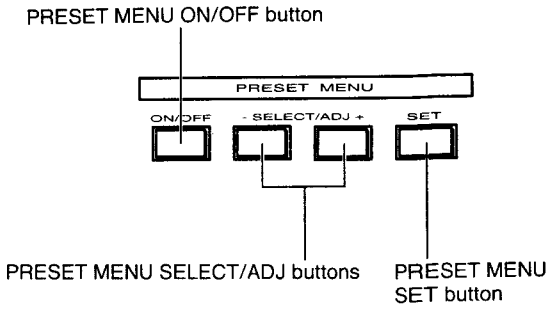
To program a number after it has been deleted from the memory:
Re-enter the channel under the deleted program number.
Refer to page 31.

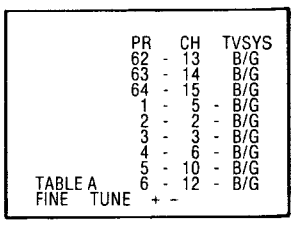


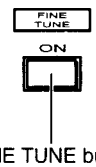
Fine tuning for the programmed TV channels

In areas with poor reception and where station transmission frequencies deviate from those given in the channel tables, it may prove necessary to improve the picture and sound quality by fine tuning.
You can store the precise tuning seting of programmed TV channels by following the instructions below:

1. Press the "0" through "9" numeric buttons to input the desired channel you wish to fine tune.
2. Press the PRESET MENU ON/OFF button to turn the operation menu on. Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button. Press the PRESET MENU SELECT/ADJ buttons until STATIONS PRESET turns red, and then press the PRESET MENU SET button. The selected program number will flash on and off.
4. Press the FINE TUNE button. The fine tuning display will appear on the screen.
5. Press the + or −button repeatedly until the picture and sound are as clear as possible.
6. When the fine adjustment is completed:
   Press the FINE TUNE button or PRESET MENU SET button again.

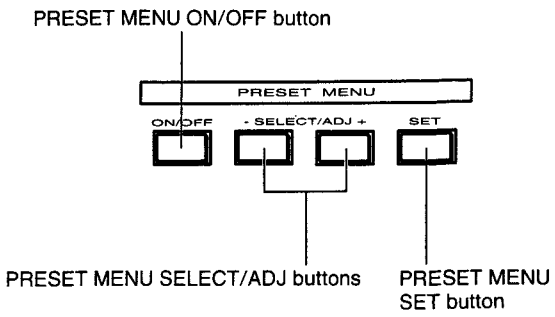




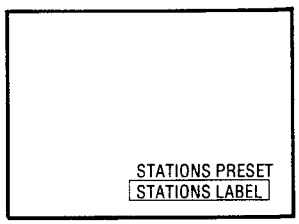


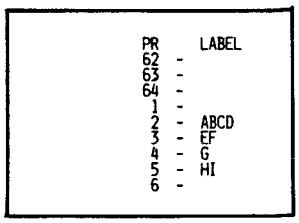
USING THE STATION LABEL FUNCTION

The station label function can be used to label each station with a call sign, network name, etc. For example, 'ABCD' can be displayed on the screen when the 'PR 1' is selected. The station label can be up to 4 characters long using the 52 characters, including __ (space) listed below.



1. Turn on the Projection TV and select a PR number you wish to label.
2. Press the PRESET MENU ON/OFF button to turn on the operation menu.Operation menu will appear on the screen.
3. Press the PRESET MENU SELECT/ADJ buttons until STATIONS STORING turns red, and then press the PRESET MENU SET button.
4. Press the PRESET MENU SELECT/ADJ buttons until STATIONS LABEL turns red, and then press the PRESET MENU SET button. Selected program number turns red.
   Press the PRESET MENU SET button.
5. Press the PRESET MENU SELECT/ADJ buttons to select the desired character.
   * Press the + or – button repeatedly until the desired character appears.
6. Press the PRESET MENU SET button to set the selected character.
7. If you wish to select additional characters, repeat steps 5 and 6.
8. Press the PRESET MENU ON/OFF button once when you finish inputting all of the desired station labels.





NOTE:

- *The following 52 characters, including __ (space), can be selected.*

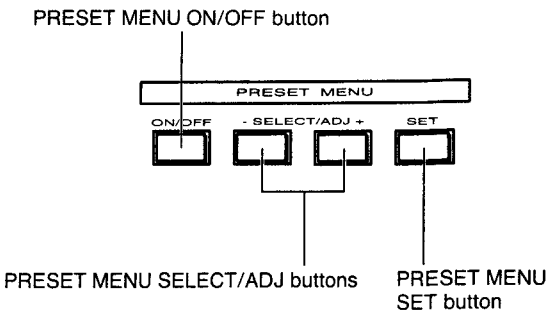
→ABCDEFGHIJKLMNOPQRSTUVWXYZÄÖÜÆØÅÑÉÇ0123456789:<> – . , □

Space

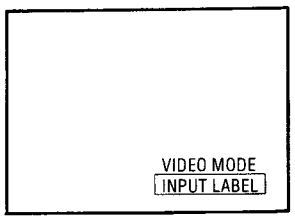
- *Be sure to press the PRESET MENU SET button after selecting the character.*

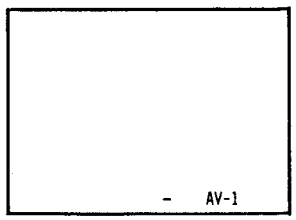
HOW TO RELABEL INPUT DISPLAYS

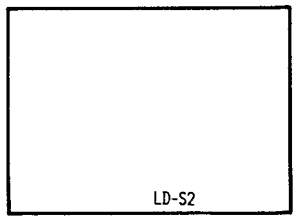
The input label function can be used to replace the input displays, such as AV-1 or AV-2, with the model numbers or model names of the equipment that are connected to the Projection TV. For example, you can display 'LD-S2' on the screen when selecting the AV-1 input source.
The input label can be up to 8 characters long using the 52 characters, including __ (space), listed below.



1. Turn on the Projection TV and select the input (AV-1, AV-2, AV-3 or AV-4) that you wish to replace with the model number of the equipment connected to the Projection TV.
   Example: Replacing the AV-1 display with model number 'LD-S2'.
2. Press the PRESET MENU ON/OFF button, and then press the PRESET MENU SELECT/ADJ buttons until the VIDEO SYSTEM display turns red, and then press the PRESET MENU SET button.
3. Press the PRESET MENU SELECT/ADJ buttons until the INPUT LABEL display turns red.
4. Press the PRESET MENU SET button. 'AV-1' will appear in the right-hand corner of the screen.
5. Press the PRESET MENU SELECT/ADJ buttons to select the desired character.
   * Press the + or – button repeatedly until the desired character appears.
6. Press the PRESET MENU SET button to set the selected character.
7. If you wish to select additional characters, repeat steps 5 and 6.
8. Press the PRESET MENU ON/OFF button once when you finish replacing the input labels.



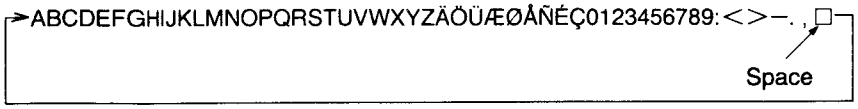




You can display the model number by pressing the ⊖ button on the remote control unit or the front panel of the main unit.

NOTE:

- *The following 52 characters, including __ (space), can be selected.*



- *Make sure to press the PRESET MENU SET button after selecting the character.*

TELETEXT FUNCTIONS

What you need to know about the text mode

Button functions

≡	Switch over to the text program.
▢	Switch back to the TV program.
≡i	Call up the overview page while receiving a teletext program other than the TOPTEXT system. (The TOP menu page will be called up when the TOPTEXT system is received).
≡▶	Page up.
◀≡	Page down.
≡↕	Double the character height on the top or bottom half pages and normal height.
≡↕	Halt and browse further in multiple pages.
≡X	Call up TV picture in text mode.
⊏≡	Mix text and TV programs.
≡?	Call up solutions.
◕	Enter a preselection page.
TOPTEXT/ FASTEXT	Colored buttons for the TOPTEXT and FASTEXT systems.

Text functions

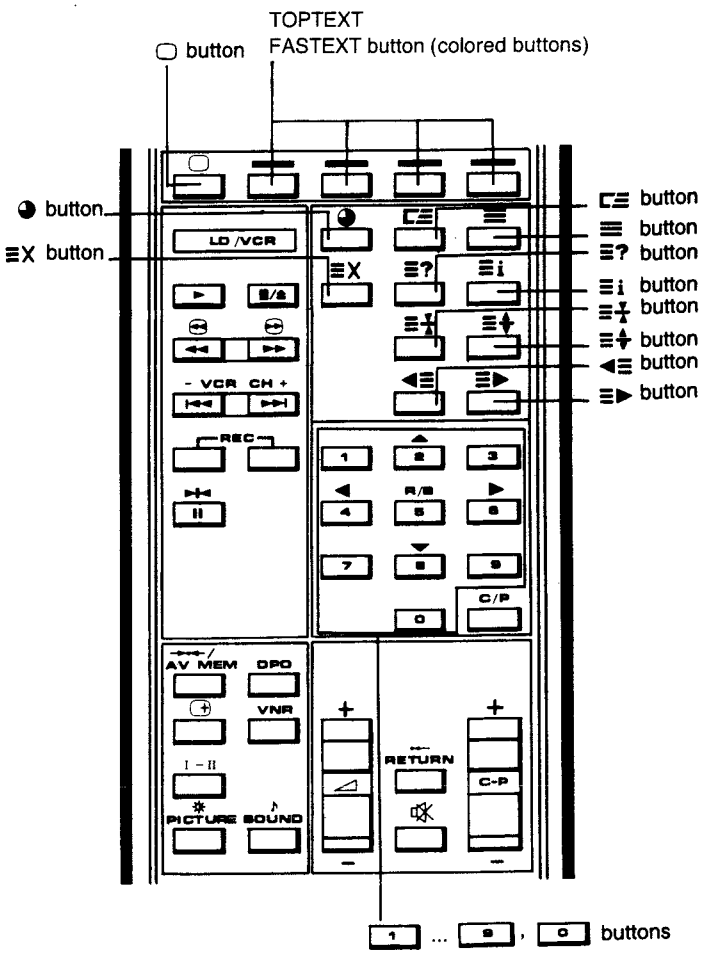
TELETEXT functions operate only on a PAL video signal combined with a multiplexed teletext signal.
Text programs are given different designations in different countries, e.g. VIDEOTEXT or TELETEXT. The contents are sometimes called pages, sometimes panels.
In some countries, text programs can be broadcast in the TOPTEXT or FASTEXT system.
Text programs require a good antenna system. When reception conditions are poor, text pages may be received incompletely or not at all. For this reason, if you have a choice of stations for the same program, always choose the most powerful one.
Perform fine tuning of the Projection TV to ensure that you obtain the best possible TV reception. For details see page 19.

Text programs are only transmitted together with a TV program or a test picture. Therefore, always proceed as follows:
A First select the TV program.
B Then switch over to the text program.

The text decoder of the Projection TV can store in memory several text pages simultaneously. With the FASTEXT system, the multipage memory allows you to call up adjacent text pages (such as news or program overviews) which may be ralated subject-wise, without appreciable waiting time, and also to select pages using a color menu. If the broadcast is in the TOPTEXT system, only forward pages can be called up.

When browsing continuously for a short time, a few seconds or a few ten seconds (up to 30 seconds) may be required to store text pages in memory.

TELETEXT functions do not operate immediately after turning on the power or changing the input mode.
A few seconds are required before operation can begin.



The most important text functions

[1] Switching over to the text program.
In order to switch over from TV to text program, press the ≡ button.

[2] Calling up the list of contents.
Press the ≡i button for calling up the overview page as required (or TOP menu page when receiving the TOPTEXT system). Any text pages that have been on the screen so far will be erased as soon as the text system has found the overview page.
Use the numeric buttons to select text pages, or the color menu (for FASTEXT or TOPTEXT programs).
To utilize the other text functions, proceed in accordance with the instructions given on the following pages of this operating instruction manual.

[3] Switching back to the TV program.
In order to switch back to TV reception, press the ▢ button.
Now you can, for instance, switch over to another TV program, and then to its text program.

Page selection

The individual text pages are selected by entering the corresponding page numbers.

[4] Use the numeric buttons 1 to 9 and 0 (zero) to enter the three-digit code for the desired page. You will see your input on the left of the header line, and next to it on the right the page number run-through. Run-through will not commence until the complete code has been entered.
The color of the page counter in the header line will change to white as soon as the selected page appears on the screen.
If it is not possible to enter the three-digit code, check whether the ◕ button for time preselection has been pressed by mistake. To do this, press the ◕ button again.

For more details, see page 39, "Browsing in text pages".

Page selection in the FASTEXT system

Different subject areas are marked by different colors on the text pages; these colors also appear on the remote control unit.

[5] For information selection, you only need the colored FASTEXT buttons on the remote control unit.
Use the appropriate colored button to select the desired subject area while still in the overview page.
Select all following pages (wherever possible) by means of the color menu. This method enables you to call up a mass of information easily and quickly.

If a text page appears without color menu, you must select a text page using the numeric buttons or call up the list of contents. For details, see steps 4 and 2 respectively.

TOPTEXT system

Overview

The TOP system enables you to select text page easily and quickly. Fast page selection is provided by the TOP (Table Of Pages) Table: This table is automatically read into the digital text decoder of the Projection TV when a program with the TOPTEXT system is selected.
The Projection TV takes from this table all requisite details on text pages contained in the program, plus the beginning of groups (subject) and blocks (subject areas).

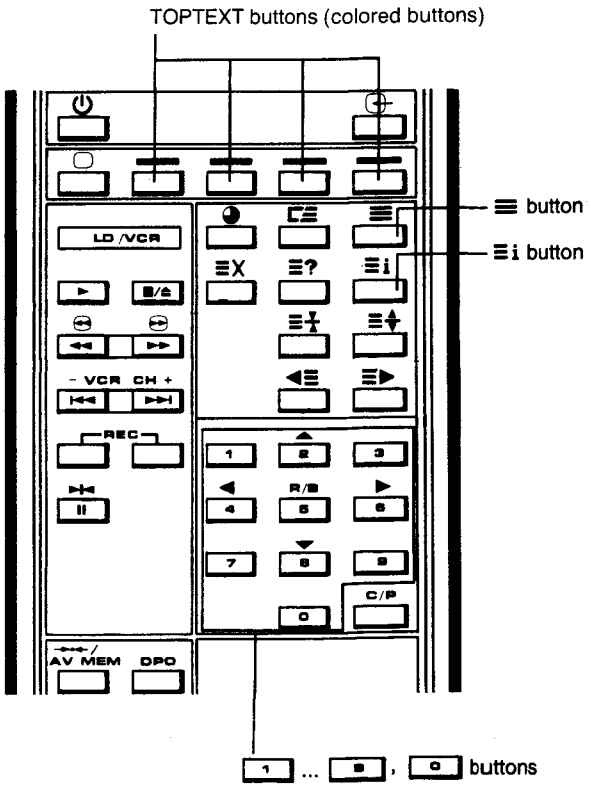
Menu prompting is performed with color coding, in two different ways:
— with the TOP MENU page.
— with the colored menu line below the text page.

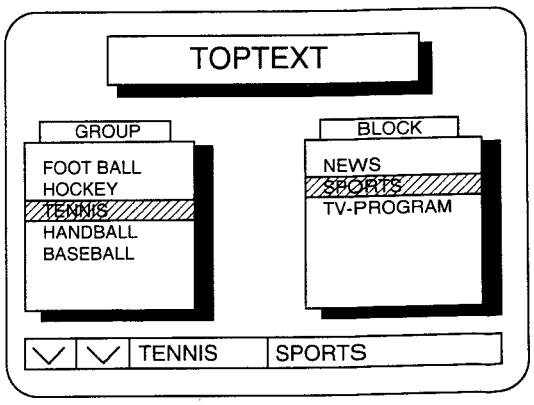
After the Projection TV has been turned on and switched immediately over to a text program of the TOPTEXT system, at first only the menu colors appear on the screen. The colored buttons are still inoperative.
As soon as the TOPTEXT system has been loaded (after 30 seconds at the latest), text will appear in the color menu. The colored buttons are now operative.
The colored buttons enable you (with no waiting time).

A Selection with the TOP menu page

The menu page shows the blocks (subject areas) of a text program in the right-hand green text field, and the individual groups (subjects) within a particular block (subject area) in the left-hand red text field. To select individual lines, you can use the **green** button in the green and the **red** button in the red text field to move a menu cursor repeatedly from top to bottom. When the menu cursor is continuously moved, the menu cursor will move from bottom to top repeatedly. In the left-hand down corner of the direction indicator will change from down (∨) to up (∧) while the menu cursor move from bottom to top.
When you move the menu cursor from block (subject area) to block (subject area) in the right-hand text field, the associated groups (subjects) will automatically change in the left-hand text field.

1. To call up (or recall) the TOPTEXT index page, press button ≡i.
2. Use the **green** button to select the block (subject area) you want in the green text field.
3. Use the **red** button to select the group (subject) you want in the red text field.
4. Use the **green** and the **red** buttons as required to change between blocks (subject areas) and groups (subjects).
5. Press the appropriate **blue** or **yellow** button to call up the block (subject area) or group (subject) you have selected.





B Selection with the menu line

Blocks (subject areas) and groups (subjects) can be selected step by step using the colored menu line with the **blue** or the **yellow** button, even without the TOP index page.
As soon as a page has been selected, the Projection TV recognizes which is the next or the previous single page you can select, and which is the next group (subject) or the next block (subject area) you can select.

[1] To select blocks (subject areas) using the **blue** botton.
[2] To select groups (subjects) using the **yellow** button.
[3] To browse forwards and backwards within individual text pages:
green button = P + = forward.
red button = P − = backward.

Operation

1 Blocks (subject areas).
Use the Blue button to browse through the block (subject area) consecutively, e.g.

P–	P+	1ST PROGRAM	NEWS ↓
P–	P+	ECONOMICS	SPORTS ↓
P–	P+	FOOT BALL	TV-PROGRAM

Once you are within the block (subject area) selected, you can continue directly with step 2 or 1.
If a particular block (subject area) selected is not subdivided into individual groups (subjects), the yellow file will be empty and step 2 with the Yellow button cannot be performed, meaning that you go on directly to step 3.
The menu line displays the next selection option in each, e.g.

P–	P+	ECONOMICS ↓	SPORTS
P–	P+	CULTURE	SPORTS ↓
P–	P+	FOOT BALL	TV-PROGRAM

2 Groups (subjects).
Use the Yellow button to browse through the groups (subjects) of the selected area, as shown below.

P–	P+	POLITICS ↓	SPORTS
P–	P+	ECONOMICS ↓	SPORTS
P–	P+	CULTURE ↓	SPORTS
P–	P+	POLITICS	SPORTS

or

P–	P+	FOOTBALL ↓	TV-PROGRAM
P–	P+	HOCKEY ↓	TV-PROGRAM
P–	P+	TENNIS ↓	TV-PROGRAM
P–	P+	HANDBALL ↓	TV-PROGRAM
P–	P+	BASEBALL ↓	TV-PROGRAM
P–	P+	FOOTBALL	TV-PROGRAM

3 Page selection.
You can use the Green button to browse forward through the individual pages, and the Red button to browse through them backward, as shown below.

P–	P+ ↓	FOOTBALL	TV-PROGRAM
P–	P+ ↓	FOOTBALL	TV-PROGRAM
P– ↓	P+	FOOTBALL	TV-PROGRAM
P–	P+	FOOTBALL	TV-PROGRAM

Note that it does not matter whether pages are assigned consecutively, e.g. 101, 102, 103, 104 ..., or whether there are gaps in between, e.g. 101, 106, 118, 122 ... The TOP system will always recognize which is the next page to be opened.
Starting from the selected page, the text decoder stores the next 5 pages for forward browsing, while for backward browsing it store only the 1 preceding page.

4 Conventional page selection.
If a page is selected using the numeric buttons, there may be (depending on the standard involved) a waiting time until the page appears on the screen.
If there is no page in the program for the page number you have selected, the selected page number is lit up in red.

Browsing in text pages

The following functions are for text programs and text pages without color menu.

Browsing in text pages

Press the ≡▶ button to browse forward, or press the ◀≡ button to browse backward.

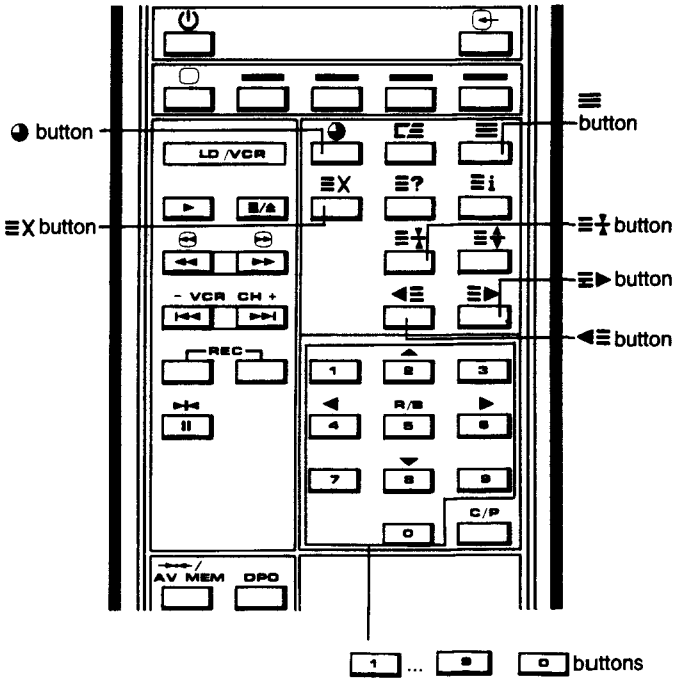
While a selected text page is being shown, the multi-page memory will automatically store succeeding pages, for you to browse in. When you are browsing through the text page quickly, you must wait until the next page has been read in.

Automatic browsing and halting of multiple pages

With multiple pages, several single pages are being transmitted one after the other under the same page number.
Multiple pages are often marked >>, >, 1/4 or 01/04, depending on the text system and program involved.
These multiple pages will be browsed through automatically at 20 to 30-second intervals, depending on the station concerned. The single page number and the total number of pages are frequently indicated by codes such as 01/04.

To halt at a single page, press the ≡╋ button as required. The header line now displays STOP instead of the page number. The halted page can be kept on the screen as long as you with. To resume browsing, press the ≡╋ button once more. You can, however, also select another page number to quit the halted single page.

Single pages can also be called up selectively. For details, see "Entering a preselection page".



Entering a preselection page

Depending on the countries and text programs involved, the following preselection function options are available:

Calling up a single multiple page

This function is only possible when the screen is displaying a multiple page, e.g. with >> and 01/04.

Text at a preselected time

For a text page, such as alarm clock, you can preselect the time at which you want to see it.
This function is operative only in some text programs, and only for one page.

Entry

1 Enter the page number desired.

2 Press the ◕ button.
Instead of the page number, you will now see — in the header.

3 Enter the desired single page number in four-digit form, e.g. 0003 or enter the desired time in four-digit form, e.g. 1715 or 0830.

4 If you want to watch TV until the selected page appears, press the ≡X button. ≡X display will appear in the picture. When the single page (or the time) is reached, page number will appear on the picture, sometimes the whole text page as well.

5 Press the ≡ button to read the page.

6 Press the ◕ button to quit this text function.

Additional text functions

1 Mixing program contents

To mix the program contents, press the ⊏≡ button, and press the ≡ button again to cancel this function.

2 Latest news

Latest news items are superimposed onto the picture on special pages. News you have read can be erased by pressing the ≡X button. ≡X display will appear in the picture. With the text news update, a new text will appear in the picture.
If you want to superimpose news again manually, press the ≡ button.

3 Subtitles

On some TV channels, subtitles are superimposed synchronously. Select the text page designated for the TV channel in question.

4 Retrieval of hidden texts

Some text pages contain results of television university exercises, answers to quiz questions, or VPS times.
To call up hidden text, press the ≡? button once, to conceal it again, press the ≡? button once more.

5 Double character height

Repeatedly pressing the ≡↕ button will cause the character height of the upper, lower half and normal height.

6 Page selection in the television picture

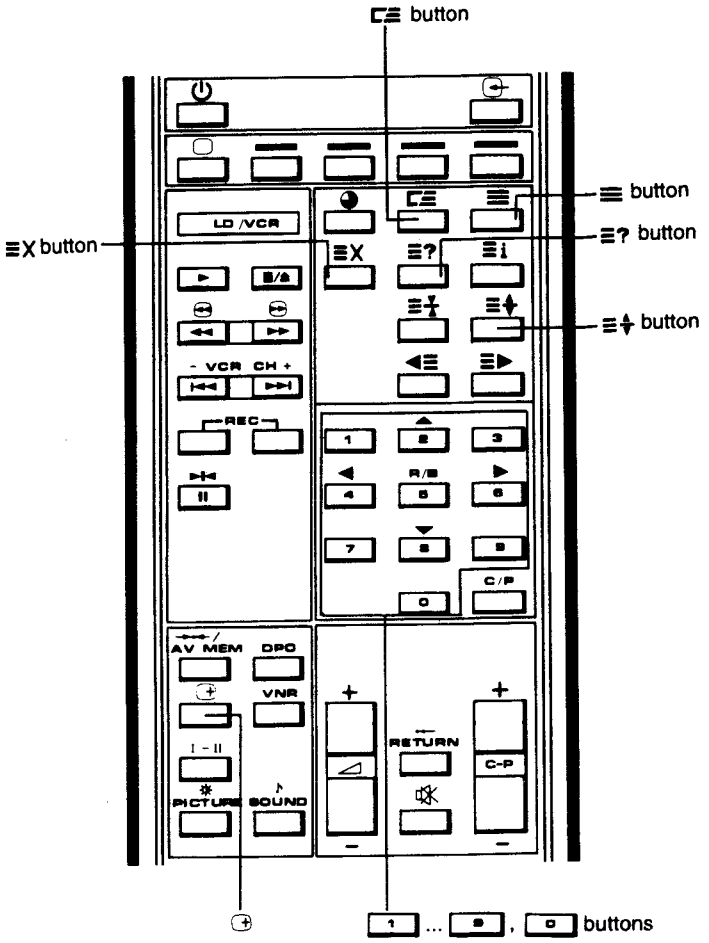
In order to bridge the (sometimes lengthy) waiting times when searching for text pages, you can also perform every page selection while the television picture appears on the screen. To do this, press the ≡X button, ≡X display will appear in the television picture. This indicates that the Projection TV is still in text mode.
Page or time display will appear on the left upper corner of the screen when the requested page or time is matched
In order to switch back to the text page, press the ≡ button in each case.

7 Time indication (PAL video signal only)

Press the ⊕ button. Input indication will appear for a few seconds on the screen. Press it again while the input indication is on display to indicate present time in the corner of the screen.
Time indication disappears in several minutes.

NOTE:

- *The current time is only visible when the selected TV program is broadcasting Teletext.*
- *TELETEXT functions do not operate immediately after turning on the power.*
  Several seconds are required for preparation.



TROUBLESHOOTING

Please check the following chart and try the suggested solutions before consulting a PIONEER authorized service center.
Often you can fix the problem by making a simple adjustment on the Projection TV. Faulty connections may be to blame, or it may be another piece of equipment that is causing the trouble.

SYMPTOM	POSSIBLE CAUSE AND SUGGESTED SOLUTION
NO PICTURE	AC power cord is not plugged into the wall socket. **Plug in the AC power cord.** Power switch is off. **Turn on the power switch on the Projection TV, or turn on using the remote control unit.** Selected video signal source is not connected to input jacks, or source unit (VCR, etc.) is not turned on or is not providing a signal. **Check connections and source unit operation.**
COLOR IS WASHED OUT	Color value is too low. **Use PICTURE button and ADJUST buttons to increase (COLOR) value.** Brightness value is too high. **Use PICTURE button and ADJUST buttons to reduce (BRIGHT) value.**
COLOR TINT IS WRONG	Tint value is too high or low. **Use PICTURE button and ADJUST buttons to adjust (TINT) value.**
STATIC IN TV PICTURE	Interference from motor vehicles, neon signs, etc. **Try changing the height or direction of the TV antenna. Move the antenna away from the source of interference.**
GHOSTING ON SCREEN	This "multipath" distortion is caused when the TV signal is received along two paths, directly and after being reflected from tall buildings, mountains or other obstacles. Strong winds may have changed the direction of the TV antenna. **Try changing the height or direction of the antenna. An antenna with better directional characteristics may be required.**
COLORED STRIPES ON SCREEN	Interference from other radio or TV signals. **Try changing the height or direction of the antenna. Try changing to a coaxial antenna cable. Coaxial cable is shielded to minimize pickup of interfering signals.**
COLORED EDGES ON IMAGES	Color convergence needs adjustment. **Tune in a channel, select CONVERGENCE from among the menu items and adjust using the convergence controls on the remote control unit. (See page 25 for details)**
UNCLEAR PICTURE	Connections are loose or cables are damaged. **Check connections and try using new cables.** Antenna may be damaged. **Check antenna.**
POOR PICTURE OR COLOR QUALITY	Interference from a nearby loudspeaker or other source of magnetism. **Move source of interference away from the Projection TV.**
NO SOUND	Rear panel SPEAKER SELECTOR is set to EXT, but external loudspeakers are not connected. **Set selector to INT.**
NO ON-SCREEN CHANNEL OR OTHER DISPLAY	Strong light striking the remote control sensor may cause the internal microcomputer to malfunction. **Change the position of the Projection TV or change the lighting so that the sensor is not exposed to strong light sources.**

- Abnormal functioning of this Projection TV may be caused by lightning, static electricity, or other external interference. To restore normal operation, turn the power off and then on again, or unplug the AC power cord and then plug it in again.
- With some VCRs, when the VCR is not in play mode, the screen sometimes fluctuates. This is not a malfunction.
- The superimposed characters and TEXT characters may slightly jitter. This is not a malfunction.

CARE OF YOUR PROJECTION TV

DO NOT:

- Do not use strong cleansers, solvents, polishes or chemically treated cloths to clean the screen or cabinet.
- Do not touch or scratch the screen.
- Do not fasten or place rubber or vinyl items on the Projection TV.
- Do not use tape on the Projection TV.
- Do not put any object on the Projection TV.

DO:

- Use a soft cloth to dust the screen and cabinet.
- If necessary, unplug the Projection TV and wipe with a soft cloth moistened with warm water (and mild soap if dirt has built up). Dry with a soft, dry cloth.
- Treat the screen with care to avoid scratches or damage.
- Ask your local dealer to clean the interior of the Projection TV if maximum picture brightness decreases. This may be caused by dust buildup inside.

TV CHANNEL SELECTION

Table A-(1/2)

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
	1			
2 (E2)	2	48.25	CCIR (CCIR, CATV, Indonesia)	B/G
3 (E3)	3	55.25		
4 (E4)	4	62.25		
5 (E5)	5	175.25		
6 (E6)	6	182.25		
7 (E7)	7	189.25		
8 (E8)	8	196.25		
9 (E9)	9	203.25		
10 (E10)	10	210.25		
11 (H1) (E11)	11	217.25		
12 (H2) (E12)	12	224.25		
A	13	53.75	Italy	
B	14	62.25		
C	15	82.25		
D	16	175.25		
E	17	183.75		
F	18	192.25		
G	19	201.25		
H	20	210.25		
21	21	471.25	CCIR	
22	22	479.25		
23	23	487.25		
24	24	495.25		
25	25	503.25		
26	26	511.25		
27	27	519.25		
28	28	527.25		
29	29	535.25		
30	30	543.25		
31	31	551.25		
32	32	559.25		
33	33	567.25		
34	34	575.25		
35	35	583.25		
36	36	591.25		
37	37	599.25		
38	38	607.25		
39	39	615.25		
40	40	623.25		
41	41	631.25		
42	42	639.25		
43	43	647.25		
44	44	655.25		
45	45	663.25		
46	46	671.25		
47	47	679.25		
48	48	687.25		
49	49	695.25		
50	50	703.25		

Table A (2/2)

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
51	51	711.25	CCIR	B/G
52	52	719.25		
53	53	727.25		
54	54	735.25		
55	55	743.25		
56	56	751.25		
57	57	759.25		
58	58	767.25		
59	59	775.25		
60	60	783.25		
61	61	791.25		
62	62	799.25		
63	63	807.25		
64	64	815.25		
65	65	823.25		
66	66	831.25		
67	67	839.25		
68	68	847.25		
69	69	855.25		
70	70	863.25		
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Table B (1/2)

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
S1	1	105.25	CCIR CATV	B/G
S2	2	112.25		
S3	3	119.25		
S4	4	126.25		
S5	5	133.25		
S6	6	140.25		
S7	7	147.25		
S8	8	154.25		
S9	9	161.25		
S10	10	168.25		
S11	11	231.25		
S12	12	238.25		
S13	13	245.25		
S14	14	252.25		
S15	15	259.25		
S16	16	266.25		
S17	17	273.25		
S18	18	280.25		
S19	19	287.25		
S20	20	294.25		
S21	21	303.25		
S22	22	311.25		
S23	23	319.25		
S24	24	327.25		
S25	25	335.25		
S26	26	343.25		
S27	27	351.25		
S28	28	359.25		
S29	29	367.25		
S30	30	375.25		
S31	31	383.25		
S32	32	391.25		
S33	33	399.25		
S34	34	407.25		
S35	35	415.25		
S36	36	423.25		
S37	37	431.25		
S38	38	439.25		
S39	39	447.25		
S40	40	455.25		
S41	41	463.25		
S22H	42	315.25		
S24H	43	339.25		
S26H	44	363.25		
S28H	45	387.25		
S30H	46	411.25		
S32H	47	435.25		
S34H	48	459.25		
	49	47.25	Belgium	
X (CCIR, CATV)	50	69.25		

Table B (2/2)

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
Y (CCIR, CATV)	51	76.25		B/G
Z (CCIR, CATV)	52	83.25	Belgium	
Z+1 (CCIR, CATV)	53	90.25		
Z+2 (CCIR, CATV)	54	97.25		
U1	55	226.25		
U2	56	234.25		
U3	57	242.25		
U4	58	250.25		
U5	59	258.25		
M1/7	60	104.25		
M2/7	61	111.25		
M3/7	62	118.25		
M4/7	63	125.25		
M5/7	64	132.25		
M6/7	65	139.25		
M7/7	66	146.25		
M8/7	67	153.25		
M9/7	68	160.25		
M10/7	69	167.25		
M1/8	70	110.25		
M2/8	71	118.25		
M3/8	72	126.25		
M4/8	73	134.25		
M5/8	74	142.25		
M6/8	75	150.25		
M7/8	76	158.25		
M8/8	77	166.25		
	78	49.25		
	79	56.25		
	80	63.25		
	81	174.25		
	82	190.25		
	83	202.25		
	84	218.25		
A	85	45.75	Ireland	I
B	86	53.75		
C	87	61.75		
D	88	175.25		
E	89	183.25		
F	90	191.25		
G	91	199.25		
H	92	207.25		
J	93	215.25		
	94			
	95			
	96			
	97			
	98			
	99			

Table C (1/2)

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
1	1	49.75	China	D/K
2	2	57.75		
3	3	65.75		
4	4	77.25		
5	5	85.25		
6	6	168.75		
7	7	176.25		
8	8	184.25		
9	9	192.25		
10	10	200.25		
11	11	208.25		
12	12	216.25		
13	13	471.25		
14	14	479.25		
15	15	487.25		
16	16	493.25		
17	17	503.25		
18	18	511.25		
19	19	519.25		
20	20	527.25		
21	21	535.25		
22	22	543.25		
23	23	551.25		
24	24	559.25		
25	25	607.25		
26	26	615.25		
27	27	623.25		
28	28	631.25		
29	29	639.25		
30	30	647.25		
31	31	655.25		
32	32	663.25		
33	33	671.25		
34	34	679.25		
35	35	687.25		
36	36	695.25		
37	37	703.25		
38	38	711.25		
39	39	719.25		
40	40	727.25		
41	41	735.25		
42	42	743.25		
43	43	751.25		
44	44	759.25		
45	45	767.25		
46	46	775.25		
47	47	783.25		
48	48	791.25		
49	49	799.25		
50	50	807.25		

Table C (2/2)

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
51	51	815.25	China	D/K
52	52	823.25		
53	53	831.25		
54	54	839.25		
55	55	847.25		
56	56	855.25		
57	57	863.25		
R1	58	49.75	OIRT	
R2	59	59.25		
R3	60	77.25		
R4	61	85.25		
R5	62	93.25		
R6	63	175.25		
R7	64	183.25		
R8	65	191.25		
R9	66	199.25		
R10	67	207.25		
R11	68	215.25		
R12	69	223.25		
0	70	46.25	Australia	B/G
1	71	57.25		
2	72	64.25		
3	73	86.25		
4	74	95.25		
5	75	102.25		
5A	76	138.25		
6	77	175.25		
7	78	182.25		
8	79	189.25		
9	80	196.25		
10	81	209.25		
11	82	216.25		
1	83	45.25	New Zealand	
2	84	55.25		
3	85	62.25		
4	86	175.25		
5	87	182.25		
6	88	189.25		
7	89	196.25		
8	90	203.25		
9	91	210.25		
10	92	217.25		
11	93	224.25		
	94			
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	99			

TV CHANNEL SELECTION

Table D-1/2

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
	1			
FB	2	55.75	New French	L'
FC1	3	60.50		
FC	4	63.75		
F1	5	176.00		L
F2	6	184.00		
F3	7	192.00		
F4	8	200.00		
F5	9	208.00		
F6	10	216.00		
K4	11	175.25	French Overseas	
K5	12	183.25		
K6	13	191.25		
K7	14	199.25		
K8	15	207.25		
K9	16	215.25		
	17			
	18			
	19			
	20			
21	21	471.25	U.K	I
22	22	479.25		
23	23	487.25		
24	24	495.25		
25	25	503.25		
26	26	511.25		
27	27	519.25		
28	28	527.25		
29	29	535.25		
30	30	543.25		
31	31	551.25		
32	32	559.25		
33	33	567.25		
34	34	575.25		
35	35	583.25		
36	36	591.25		
37	37	599.25		
38	38	607.25		
39	39	615.25		
40	40	623.25		
41	41	631.25		
42	42	639.25		
43	43	647.25		
44	44	655.25		
45	45	663.25		
46	46	671.25		
47	47	679.25		
48	48	687.25		
49	49	695.25		
50	50	703.25		

Table D-2/2

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
51	51	711.25	U.K	I
52	52	719.25		
53	53	727.25		
54	54	735.25		
55	55	743.25		
56	56	751.25		
57	57	759.25		
58	58	767.25		
59	59	775.25		
60	60	783.25		
61	61	791.25		
62	62	799.25		
63	63	807.25		
64	64	815.25		
65	65	823.25		
66	66	831.25		
67	67	839.25		
68	68	847.25		
69	69	855.25		
B	70	116.75	Another France	L
C	71	128.75		
D	72	140.75		
E	73	152.75		
F	74	164.75		
G	75	176.75		
H	76	188.75		
I	77	200.75		
J	78	212.75		
K	79	224.75		
L	80	236.75		
M	81	248.75		
N	82	260.75		
O	83	272.75		
P	84	284.75		
Q	85	296.75		
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Table E-1/2

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
	1			
2	2	48.25	C.C.I.R.	L
3	3	55.25		
4	4	62.25		
5	5	175.25		
6	6	182.25		
7	7	189.25		
8	8	196.25		
9	9	203.25		
10	10	210.25		
11	11	217.25		
12	12	224.25		
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	18			
	19			
	20			
21	21	471.25	C.C.I.R.	L
22	22	479.25		
23	23	487.25		
24	24	495.25		
25	25	503.25		
26	26	511.25		
27	27	519.25		
28	28	527.25		
29	29	535.25		
30	30	543.25		
31	31	551.25		
32	32	559.25		
33	33	567.25		
34	34	575.25		
35	35	583.25		
36	36	591.25		
37	37	599.25		
38	38	607.25		
39	39	615.25		
40	40	623.25		
41	41	631.25		
42	42	639.25		
43	43	647.25		
44	44	655.25		
45	45	663.25		
46	46	671.25		
47	47	679.25		
48	48	687.25		
49	49	695.25		
50	50	703.25		

Table E-2/2

Channel designation	Entry number	Transmission frequency (MHz)	Remarks	TV system
51	51	711.25	C.C.I.R.	L
52	52	719.25		
53	53	727.25		
54	54	735.25		
55	55	743.25		
56	56	751.25		
57	57	759.25		
58	58	767.25		
59	59	775.25		
60	60	783.25		
61	61	791.25		
62	62	799.25		
63	63	807.25		
64	64	815.25		
65	65	823.25		
66	66	831.25		
67	67	839.25		
68	68	847.25		
69	69	855.25		
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SPECIFICATIONS

DISPLAY SECTION

Reception system ..... PAL, SECAM, NTSC, NTSC 4.43
Screen size ..... 40"
CRT ..... 7" CRT x3
Actual viewing angle ..... Horizontal H = 140°
Vertical V = 50°
Input terminals .....2 Scarts (1: with AV output, 1: with TV output)
2 AV Cinch
2 Y/C plug
Output terminals ..... 1 AV Cinch
1 Variable audio output (Cinch)
Input signal .....Video signal: 1.0 Vp-p ±3 dB

Input impedance ..... Video input: 75 ohms ±10%
Audio input: 10 kohms or more
Input signal polarity ..... Synchronized negative
Output terminal signal ratings:
Output terminals ..... Video signal: 1 Vp-p (75 ohms load)
Audio signal: 500 mV rms (100% modulation)
Output impedance ..... Video output: 75 ohms ± 10%
Audio output: Less than 1 kohms

TUNER SECTION

Circuit type ..... Video signal detection:
PLL detection
PLL Digital Synthesizer system
Audio multiplex: CCIR system, NICAM
Reception channels .....CCIR VHF; CH2, – CH12,
CCIR UHF; CH21 – CH69
CCIR CATV, E2 - E12, X - Z+2,
S1 - S41, S22H - S34H
Ireland; A - J
Belgium; X - Z+2, U1 - U5,
M1/7 - M10/7, M1/8 - M8/8
New French; FB - F6
French Overseas; K4 - K9
U.K; CH21 - CH69
Another France; B - Q
Italy; CHA - CHH2
OIRT; R1 - R12
Australia; CH0 - CH11
New Zealand; CH1 - CH11
China; CH1 - CH57
Antenna terminal .....ANTENNA terminal,
TV coaxial 75 ohms UNBAL

AMPLIFIER SECTION

Tone control ..... BASS, TREBLE
Built-in speaker system .....12 cm mid-low range ×2
6.6 cm high range ×2
External speaker impedance ..... 8—16 ohms

ELECTRICAL SECTION, MISCELLANEOUS

Power requirements ..... a.c. 220—240 Volts ~, 50/60 Hz
Power consumption .....300 W
External dimensions .....1,002 (W)×556 (D)×824 (H) mm
Weight of main unit
..... 59 kg

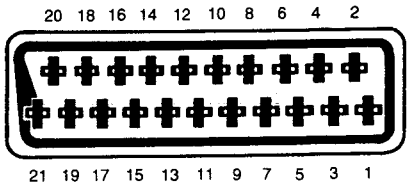
WIRELESS REMOTE CONTROL UNIT

Operation System: Infrared remote control system
Power source: Two IEC R6 (UM-3, "AA") 1.5 V dry cell batteries

ACCESSORIES

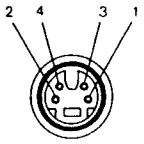
Operating instructions 1
Remote control unit 1
IEC R6 (UM-3, "AA" size) dry cell batteries 2
Power cord 1
Circuit diagram (Italian model only) 4

Assignment of connections for EURO-AV sockets



EURO-AV1	EURO-AV2
1 Audio output B	1 Audio output B
2 Audio input B	2 Audio input B
3 Audio output A	3 Audio output A
4 Audio ground	4 Audio ground
5 Blue ground	5 —
6 Audio input A	6 Audio input A
7 Blue	7 —
8 Switching voltage	8 —
9 Green ground	9 —
10 —	10 —
11 Green	11 —
12 —	12 —
13 Red ground	13 —
14 —	14 —
15 Red or chroma signal with S-Video	15 Chroma signal with S-Video
16 Blanking signal	16 —
17 Video output ground	17 Video output ground
18 Video input ground	18 Video input ground
19 Video output	19 Video output
20 Video input or luminance with S-Video	20 Video input or luminance with S-Video
21 Screening or ground	21 Screening or ground

Assignment of connections for S-VIDEO socket



1 Ground	3 Luminance
2 Ground	4 Chroma signal

NOTE:
Specifications and design subject to possible modifications without notice due to improvements.

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